BOSTON PUBLIC LIBRARY
3 9999 08655 565 1

No 7609.176.

THE TRVSTEES OF THE
PVBLIC LIBRARY
OMNIVM
LVX
CIVIVM
OF THE CITY OF
BOSTON
1852 : 1878

AN

INTRODUCTION

TO

PHRENOLOGY,

IN THE FORM OF

QUESTION AND ANSWER,

*7609.176

WITH

AN APPENDIX, AND COPIOUS ILLUSTRATIVE NOTES.

BY ROBERT MACNISH,
Author of the "Anatomy of Drunkenness," and "Philosophy of Sleep," and Member of the Faculty of Physicians and Surgeons of Glasgow.

BOSTON:
MARSH, CAPEN & LYON,
1836.

435

Entered, according to Act of Congress, in the year 1836,
BY MARSH, CAPEN AND LYON,
In the Clerk's Office of the District Court of Massachusetts.

Apr 20 1907
A

PUBLIC LIBRARY
OF THE
CITY OF BOSTON

TO

ROBERT COX, Esq.

Conservator of the Museum of the Phrenological Society, Edinburgh,

THIS WORK

IS INSCRIBED, BY HIS FRIEND,

THE AUTHOR.

PREFACE.

My first ideas of Phrenology were obtained from Dr Gall himself, whose lectures I attended in Paris, during the year 1825. Before that time, I, in common with almost all who are ignorant of the subject, spoke of it with great contempt, and took every opportunity of turning it into ridicule. The discourses of this great man, and various private conversations which I had the honor of holding with him, produced a total change in my ideas, and convinced me, that the doctrines he taught, so far from deserving the absurd treatment which they then generally met with, were, in themselves, highly beautiful, as expositions of the human mind in its various phases, and every way worthy of attention. Much reflection, and many appeals to nature, since that period, have satisfied me of their perfect truth.

Some men of great talent have attacked Phrenology, but their weapons, being directed against impregnable truths, have invariably been shattered in the contest. Dr Gordon assailed the science with much acrimony in the *Edinburgh Review*, and was signally confuted by Dr Spurzheim. Mr Jeffrey, with greater wit, and in a more generous spirit, repeated the assault in the same able work, only to meet with a confutation equally conclusive from the pen Mr Combe. No one can read the attack and the defence in either case, without being perfectly satisfied on which side the superiority lay; and the same has been the case on every occasion, where Phrenologists and their opponents have met in battle. Victory

has invariably befriended the former, not merely because they fought better, but because their cause was the best.

Great progress has been made by Phrenology within the last ten years, especially in France, Great Britain, and the United States. It has met with considerable success in Sweden and Denmark, and is now beginning to force its way into Italy. The late Professor Uccelli, of Florence, was a phrenologist. For this heinous crime, he lost his chair in the University of that city, and was persecuted with all the blind malice of bigotry and intolerance. One of the best Phrenologists in the North, is Dr Otto, of Copenhagen. Berzelius, of Stockholm, the most illustrious of living chemists, has become a convert to the science ; and Andral, Broussais, Cloquet, and Vimont, four of the greatest medical characters in the French capital, have done the same. The conversion of the latter of these eminent men is curious, and forms a memorable fact in the history of Phrenology. Having attended Gall, he thought he could easily refute his doctrines ; and, for this purpose, made a vast collection of specimens, chiefly of skulls of the lower animals ; but the very evidence he was thus accumulating for the overthrow of the science, had entirely the opposite effect. It satisfied him of its truth, and led to the publication of his magnificent work on "Human and Comparative Phrenology." A Phrenological Society, numbering among its members many of the ablest scientific and literary men in Paris, has for some time been in existence. By this body, a Journal, exclusively devoted to the subject, and containing many admirable papers, is regularly published. Great zeal for Phrenology exists in the United States. Dr Caldwell, of Lexington, has written with uncommon talent upon the science, and a valuable work, entitled "Annals of Phrenology," is issued periodically at Boston. In that city, a phrenological library is in the course of publication, consisting of reprints of all the best works which have appeared upon the subject, embodying also a translation, in six octavo volumes, of Dr Gall's unrivalled work, *Sur les Fonctions du Cerveau*. The progress which Phrenology has made,

and is making in Great Britain, is too obvious to require demonstration. Mr Lawrence, one of the first surgeons and physiologists in this country, is favorably to the doctrines. In London, they have been supported with great power of reasoning by Dr Elliotson; and such able physicians as Macintosh, of Edinburgh, and Barlow, of Bath, have not hesitated openly and unscrupulously to adopt them. In Germany, the science has prospered less than almost any where else, thus verifying the old adage, that "prophets are never esteemed in their own country." Even there, however, it can boast of the great name of Blumenbach, who, contrary to the general understanding upon the subject, is known to favor its pretensions.*

As people get acquainted with this science, and the vast number of important points on which it bears, the opposition which it has hitherto encountered will gradually cease. This consummation is fast taking place, even already. Converts are daily making to its ranks, and those who still stand aloof, are beginning to speak of it with some degree of respect. The efforts of the press against the science, will, for a time, continue to check its onward march, but these also must give way before increasing knowledge. In the mean time, the public prints abound with ingenious inventions, to its prejudice. Every notorious criminal who is executed, is found to possess a splendid phrenological development, and so forth. Lacenaire, the assassin of sixteen individuals, we are gravely told, had a head such as Gall would have assigned to a mild, benevolent, and religious character; and Fieschi, it is pretended, was remarkably deficient in the organs of Firmness and Destructiveness. All such stories are idle inventions, without a particle of truth, but they serve the intended purpose of imposing upon the unwary, and exciting a hostile feeling towards Phrenology.

---

* See Phrenological Journal, vol. viii. p. 531.

In whatever way we view this science, its tendency is excellent. It is eminently useful to the medical practitioner, by turning his attention forcibly to the state of the brain and the whole nervous system, in a state of health and disease—to those who have the charge of lunatics and criminals—to those concerned in the administration of justice—to parents, in the intellectual, moral, and physical management of their children, and, in short, to every class of society. Grievous errors in education, in the treatment of malefactors, and in what are called mental diseases, are constantly committed, from ignorance of the light thrown by it on those important subjects. A science which is able to accomplish all this, cannot be a trivial one; and Time, the great arbiter, will yet render it ample justice, when every thing which has been said and written against it is utterly forgotten.

In the present little work I have endeavored to exhibit all the leading features of Phrenology in a popular light. The reader will perhaps learn so much from it as to make him wish for a more extensive acquaintance with the subject. If such should be the case, I shall not consider the labor bestowed upon these pages thrown away. The form of question and answer has been adopted as well suited for a short sketch of a debateable subject, like the present. It has enabled me to bring forward the objections to the science in the way in which they are usually stated, and to meet them with suitable replies. R. M.

18*th March*, 1836.

CLASSIFICATION OF THE FACULTIES*.

ORDER I.—FEELINGS, OR AFFECTIVE FACULTIES.

Genus I.—Propensities.

1 Amativeness.
2 Philoprogenitiveness.
3 Concentrativeness.
4 Adhesiveness.
5 Combativeness.
6 Destructiveness.
† Alimentiveness. Love of Life.
7 Secretiveness.
8 Acquisitiveness.
9 Constructiveness.

Genus II.—Sentiments.

Species 1.—*Inferior Sentiments.*

10 Self-Esteem.
11 Love of Approbation.
12 Cautiousness.

Species 2.—*Superior Sentiments.*

13 Benevolence.
14 Veneration.
15 Firmness.
16 Conscientiousness.
17 Hope.
18 Wonder.
19 Ideality.
20 Wit.
21 Imitation.

* The classification of the faculties by Spurzheim, will be found in another part of this work.—*Am. Editor.*

ORDER II.—INTELLECTUAL FACULTIES.

Genus I.—The External Senses.

Feeling.
Taste.
Smell.
Hearing.
Sight.
Sense of Mechanical Resistance, (*conjectural.*)

Genus II.—The Perceptive, or Knowing Faculties.

Species 2.—*Intellectual Faculties which take cognizance of the existence of external objects, and their physical qualities.*

22 Individuality.
23 Form.
24 Size.
25 Weight.
26 Coloring.

Species 2.—*Intellectual Faculties which take cognizance of the relations of external objects.*

27 Locality.
28 Number.
29 Order.
30 Eventuality.
31 Time.
32 Tune.
33 Language.

Genus III.—Reflective Faculties.

34 Comparison.
35 Causality.

PRINCIPLES

OF

PHRENOLOGY.

What is the material organ of the mind?

The brain.

Do you mean to say that the brain and the mind are identical?

No. I merely affirm that the brain is the instrument by which the mind is manifested. The mind requires a material apparatus to work with; the brain is this apparatus. The brain itself is not alleged by phrenologists to be mind, any more than a musical instrument is music, the tongue taste, or the ears hearing. When the strings of a harp or violin are touched in a particular manner, we have music; when the brain is in certain states we have displays of the mental faculties. Of the mind as a separate entity, we can know nothing whatever; and we must judge of it in the only way in which it comes under our cognizance.[1]

1 "The mind *sees* through the medium of the eye, just as it *thinks* or *feels* through the medium of the brain; and as changes in the condition of the eye deteriorate or destroy the power of vision, without any affection of the principle of mind, the obvious inference follows, that, in like manner, many changes in the condition of the brain destroy the power of feeling or of thinking, and yet the mind itself, or soul, remain essentially the same."—*Dr Combe on Mental Derangement.*

What reason is there to infer that the mind is manifested through the medium of the brain?

We have undoubted evidence of this in the following and many similar facts. When a person receives a violent blow on the head; when blood or any other fluid presses upon the brain; or when a portion of the skull is beaten in, insensibility is a frequent, or rather a general occurrence. A dose of opium, by acting on the brain, suspends the operation of mind; in like manner, when the brain is inflamed, the mental operations are disturbed. Did the mind act independently of the brain, no physical injury or irritation of the latter should have any effect upon the faculties; whereas, we find that the reverse is the case. Insanity, in fact, is nothing but a disease of the brain, inducing false mental manifestations. Finally, when the brain is extremely small, idiocy is the invariable result.

Does the mind consist of one faculty, or of several?

Undoubtedly of many. We have the passions of fear, love, attachment, pugnacity, &c.; the sentiments of benevolence, veneration, justice, &c.; besides a variety of other qualities, such as the powers of music, calculation, causation, and many others. All these powers, susceptibilities and emotions of the mind are called faculties; each is distinct, and possessed by different individuals in different degrees.

Seeing that the mental faculties are so varied, how can a single viscus like the brain serve to manifest the whole of them? Other viscera, such as the stomach, liver, and kidneys, perform only one function; but here, in opposition to what prevails elsewhere in the animal economy, one part seems to perform a multiplicity of functions.

The brain is no exception to the general rule. There is irresistible evidence to demonstrate that it is not a single organ, but in reality a congeries of organs; so intimately

blended, however, as to appear one. Each of these is the seat of a particular mental faculty, so that, as the *whole* mind acts through the medium of the *whole* brain, so does each faculty of the mind act through the medium of a certain portion of the brain. Thus, there is a part of the brain appropriated for the faculty of Tune, another for that of Imitation, and so on through the whole series.

What reason is there for supposing the existence of such divisions of the brain, and such appropriations of the mental faculties to these divisions?

The reasons are numerous. Were the brain a single organ, of which every part was employed in the manifestation of all the mental faculties, there could be no such thing as partial madness; if a portion of the brain were diseased, the whole mind should suffer; whereas, we often find that one faculty is insane, while all the others are perfectly sound. Dreaming, likewise, is inconsistent with the supposition that the brain is a single organ. If it were so, we should be either completely awake or completely asleep; whereas, in dreams, one or more faculties are in operation while the rest continue in perfect repose. The perversion in madness, and the wakefulness in dreaming, of certain faculties, can be explained only by supposing that each of these faculties has a separate locality in the brain. It is only on the same principle that partial genius, and partial idiocy can be accounted for.

These are certainly strong proofs, but are there no others of a more direct and tangible description?

Many such. It is sufficient to mention that, if in a healthy brain, any particular portion is very much developed, the individual will be found to possess a more than usual energy in some particular faculty. Take, for instance, two heads, as nearly as possible alike in their general configuration, but differing strongly in shape at a cer-

tain point; the persons to whom they belong will be found to resemble each other in disposition, except in so far as the faculties connected with the organ or organs which lie at that point are concerned: here their characters will differ most materially.

What is the science called which teaches this correspondence between the formation of the brain, and constitution of the mind?

It is denominated PHRENOLOGY; the merit of discovering which, and reducing it into a system, is due to the celebrated Dr Gall, of Vienna. Dr Spurzheim, his disciple and associate, has also done much to extend and improve the science, which has been still farther advanced by the labors of Mr Combe, and other ingenious men in this country and on the continent.

What were the circumstances which led Dr Gall to the discovery?

They were partly accidental, and partly owing to the intuitive sagacity and excellent powers of observation possessed by that remarkable man. While a mere boy at school, he remarked that such of his fellow-pupils as had prominent eyes were those with whom, on matters of scholarship, he had the greatest difficulty in competing. He might surpass them in original composition, but in exercises of verbal memory they left him far behind, and were invariably the best scholars. On leaving school and going to the University, he observed the same rule to hold good. The *ox-eyed* students, as they were called, always bore away the palm whenever the acquisition of languages was concerned. This fact struck him forcibly, but for a long time he knew not what to make of it. Some time afterwards, he had occasion to remark that one of his acquaintances, with whom he used to ramble in the woods, never lost his way, which Gall himself frequently did.

This young man had two very marked prominences on his forehead, just above the root of the nose, while with Gall there were no such protuberances. On extending his observations, he found that persons so characterized acquired with great ease a knowledge of localities—that they found their way almost intuitively, as it were, in any route, however complex, if they had been there once before; and that those who wanted the marks in question had great difficulty in so doing. After reflecting deeply, he came to the conclusion that these differences might depend upon the size of particular parts of the brain. This happy idea having once suggested itself, he followed it up with admirable skill and indefatigable perseverance, and at last ascertained distinctly, that the strength of the mental faculties is, *cæteris paribus*, in proportion to the size of those compartments of the brain by which they are manifested.

Do you mean to affirm, that if one man has a certain organ larger than it is in another, he will possess the faculty belonging to that organ in greater vigor?

Most certainly;—supposing the brains of both to be equally healthy, their temperaments the same, and the circumstances in which they have been placed, equally favorable for the excitement and cultivation of the particular faculty. It is obviously as impossible for a person with a great deficiency of the organs, of what phrenologists call the moral sentiments, such as Benevolence and Conscientiousness, to be a virtuous character, as it is for the brain of an idiot to display the splendid intellect of a Milton or a Cuvier. This is not a mere assertion, but is borne out by the evidence of thousands of facts, which are open to any one who chooses to investigate the subject.

A large brain, therefore, will, cæteris paribus, *be superior in power to a smaller one?*

Facts place this beyond a doubt. A large-brained per-

son acquires a natural ascendancy over another, whose cerebral system is smaller. A nation of small-brained people is easily conquered, and held in subjection; witness the facility with which the small-headed Hindoos were subjugated, and the extreme difficulty experienced in overcoming the Caribs, whose brains were large and active. The large size of the Scotch brain was probably one of the causes which render the permanent subjugation of Scotland by the English impossible.

What is the average weight of the brain?

The brain, at birth, weighs about ten ounces. The weight of the male adult brain is generally about three pounds and a half, apothecaries' weight;[2] that of the female from three to four ounces less, according to Virey. Farther observations, however, are necessary, to ascertain the average difference in this respect between the sexes, although the fact is undeniable, that, generally speaking, the female brain is the smaller of the two.

What follows when an organ is remarkably small?

Extreme feebleness of the faculty which is connected with it.

Will the exercise of an organ increase its size?

It is so conjectured; but a sufficiently large body of facts appear still wanting to set the matter completely at rest. If we work an organ vigorously, especially during youth, it is not unreasonable to suppose, that its bulk may be thereby augmented; the analogy of the muscles favors such a conjecture. At all events, it is certain, that the

2 Dr Elliotson presented to the London Phrenological Society, the cast of the head of a male idiot, aged eighteen years, which measured only sixteen inches in circumference, and seven inches and three quarters from ear to ear, over the vertex. The cerebrum weighed but one pound seven and a half ounces, and the cerebellum but four ounces. Compare this with Byron's brain, which weighed four pounds and a half, or with Cuvier's, whose weight was four pounds thirteen ounces and a half. In ascertaining the weight of the brain, we previously remove its lining membrane, the dura mater.

energy and activity of the organ will be greatly increased. Ages of civilization, in any country, will, very probably, improve the form and quality of the national brain, by the continued action which this state of society confers on the moral and intellectual organs, and the comparative inactivity in which it keeps the lower propensities.[3]

May an organ be well developed, and yet not manifest its faculty with any degree of power?

This may occasionally happen in consequence of a general, or partial want of energy in the brain. It is most likely to occur in lymphatic temperaments, where the cerebral circulation is carried on with little vigor. Sometimes a single organ becomes apathetic, while the rest are healthy. Isolated cases of this description form no objection to phrenology, but rather prove its truth, in so far as they demonstrate, that vigorous results cannot be expected from unhealthy organs.

Can the natural dispositions and talents of an individual be inferred by examination of his brain?

They can be predicted with great accuracy after such an examination, but it is necessary to take different circumstances into view, such as temperament, education, and example, as they modify, to a considerable extent, the character. A phrenologist, knowing these modifying causes, can speak with great precision after examining the brain.

---

3 In the article "Hydrocéphale," in the twenty-second volume of the "Dictionnaire des Sciences Médicales," it is stated, that the heads of great thinkers frequently increase till fifty years of age. According to Itard, the head of Napoleon, which acquired an enormous development, was small in youth. The fact seems pretty well established, that if the brain is not exercised, it may actually diminish in bulk. In long protracted madness, the brain seems often to diminish, especially in the intellectual regions. Such was probably the case with Dean Swift, who, for some years before death, was in an imbecile state of mind. Esquirol mentions the case of an insane female, whose forehead, on her admission into the hospital, was so large that he had a drawing mad of it, but afterwards it became small and narrow.

Can actions be inferred?

No. These depend much on the circumstances in which the person is placed. A phrenologist, examining the head of Hare, would infer, that his mind was of a low and grovelling description, that its tendency was towards cruelty and contention, and that his pleasures were all of a base kind; but he could not infer that he would necessarily commit murder. Hare became a murderer by the force of circumstances. He lived many years without committing murder; and when he did so, it was to obtain money to gratify his grovelling desires. Could he have procured money without murder, it is not at all likely that he would have been guilty of the crime. Men always act from the strongest motives. The motives which induced Hare to murder, were, unhappily, stronger than the restraining ones, and, therefore, he murdered.

Wherein consists the abuse of a faculty?

A faculty is said to be abused when it acts in a degree too intense, or towards an improper object; also when it is called into activity at an improper time, or in an improper place.

In predicating character, is it absolutely necessary to examine the brain?

No. Inferences may, in general, be drawn with great accuracy, during life, by examining the external surface of the head.

Does not the skull afford an obstacle to obtaining a correct idea of the shape of the brain?

This happens only in rare cases, and almost always at isolated points; the whole skull is seldom affected. In a vast majority of cases, the cranium gives as accurate a representation of the shape of the brain, as the rind of an orange gives of the orange itself. In old age, however, and when the brain is diseased, the skull frequently becomes very thick, occasionally very thin, and at other

times of very unequal thickness. In such cases, the form of the brain cannot be accurately ascertained during life.

Is the skull formed before or after the brain?

The brain is formed first, and gives shape to the skull, which is moulded over it.[4]

At what period does the brain attain its full size?

Great differences of opinion exist with regard to this point. According to phrenological writers, the brain does not attain its full size till between the twentieth and thirtieth year; while, according to Sir William Hamilton and the Wenzels, it arrives at its utmost magnitude at the age of seven. In such a conflict of totally different opinions, we must regard the point as undecided, although it seems incredible, that the brains of children of seven, are equal in size to those of full grown men.

After attaining its full size, does the brain ever diminish?

It does so in very old age; at which time the cranium, as already noticed, becomes frequently thicker, its inner layer retreating inwards, and either being followed by the outer layer, or leaving a considerable thickness of spongy diplöe between them.

---

4 The reader should make himself acquainted with the general anatomy of the skull, otherwise he will be at a loss to understand the references occasionally made to its particular parts. The bones of the skull-cap (that cavity which contains the brain) are as follows:—1. The *frontal bone*, which forms the upper and fore part of the head. 2. The *occipital bone*, which forms the lower and back part. 3. The two *parietal bones*, which lie between the frontal and occipital, and form the sides and top of the head. 4. The two *temporal bones*, which lie in the temples, and form the lower parts of the sides of the skull. 5. The *ethmoid bone*, which lies in the base of the skull, immediately over and behind the nose. 6. The *sphenoid bone*, which lies between the ethmoid and occipital bones, and supports the centre of the brain. These bones are united by seams or sutures. The *coronal suture* runs between the frontal and parietal bones; the *lambdoidal suture* between the parietal and the occipital, and the *saggittal sutures* between the two parietals, along the centre of the head, stretching from the coronal to the lambdoidal suture. The *temporal sutures* join the temporal bones to the parietal, occipital, and frontal bones. The *sphenoidal* and *ethmoidal sutures* connect these two bones to each other, and to the rest.

Is the substance of the brain of the same consistence at every period of life?

No. The infant brain is soft: as we grow older it becomes more consistent, and in old age acquires still greater firmness.

Does phrenology apply solely to the human race?

It does not. The character of a dog is as much influenced by the form of its brain as that of a man.

You have stated that a large brain, other circumstances being alike, communicates greater mental power than a small one. How do you reconcile this assertion with the fact, that the brain of the sparrow is greatly less than that of the vulture, an animal decidedly inferior to the sparrow in point of sagacity?

I answer this by stating that the circumstances in the two cases are by no means alike; and that we must compare the brains of animals of the same species before we can arrive at a proper knowledge of the effects of size. A large-brained vulture will manifest greater energy than a small-brained one, and so with the sparrow. It is evident that, in contrasting such different animals, circumstances are not the same; the organization or constitution of the sparrow's brain being different from that of the vulture's, and the *intellectual* organs relatively larger. Compare sparrows with sparrows, vultures with vultures, etc., and the phrenological maxim of size being, *cæteris paribus*, the index of power will be made perfectly manifest. These remarks apply to the muscular system as well as to the brain—the bodily strength of some animals being much greater, in proportion to the size of their muscles than that of others of a different species. The flea, for example, as Haller has remarked, can draw from seventy to eighty times its own weight, whereas a horse cannot draw with ease more than three times its own weight. But of two

fleas, that which has the larger muscles will have the greater strength. Again, some birds with small eyes have vision keener than birds of a different species with larger eyes. In every case, therefore, individuals of the same species must be compared.

Is the strength of the mental faculties proportioned to the size of the brain, as compared with that of the body?

This, in a general sense, holds good, but there are so many exceptions to the rule, that we can ground nothing upon it.[5]

Have all nations the same form of brain?

No. This varies considerably in different countries. The African brain differs in shape from the European, and so does the Carib and Esquimaux. Even in Europe, the same form of brain does not prevail rigidly; the German brain, for instance, is rounder and less elongated than the French.

The character of individuals, and even of nations, often appears to change. Is not this inconsistent with the phrenological doctrines?

It is not. Circumstances, by calling into activity organs which have been little exercised, or repressing the activity of others that have been worked a great deal, may produce a change in the energy of their respective functions.

Can the dispositions of the lower animals be inferred from the form of their brain?

They can. Cruel, ferocious animals, such as the tiger,

---

5 "The brain of a crocodile," says Spurzheim, "twelve feet long, of a serpent of eighteen, or of a turtle, which weighs some hundred pounds, does not exceed several drachms in weight; the great vulture of the Alps has little more brain than a crow, the turkey scarcely so much as a parrot; from which facts it has been concluded that the manifestations of the mental faculties are pretty nearly proportioned to the size of the brain, *as compared to that of the body.* But it is demonstrated by Wrisberg, Soemmering, Blumenbach, Cuvier, and others, that the sparrow, the canary, the linnet, the chaffinch, the redbreast, and many apes, had, relatively to the size of their bodies, more brain than man."

and the hyena, have a particular form of brain very different from that possessed by gentle, timid creatures, as the fawn and the antelope. The brain of the hawk or vulture differs in shape from that of the dove. Birds which sing have a differently formed brain from those which do not.[6]

What organs are we disposed to exercise most?

Those which are largest. Little gratification is experienced in the exercise of the weaker faculties: thus a man, who is not all combative, would feel exceedingly annoyed at the idea of being obliged to fight; while another, with an opposite configuration of brain, would feel delight in having an opportunity of indulging his favorite propensity. Nor is this law confined to the cerebral organs; a man of great muscular power is fond of hard exercise; another of little physical energy dislikes it, and is partial to rest.

Are the habitual attitude and expression affected by the predominating organs?

They generally are. It is seldom difficult to detect by his air and carriage when a man is proud, vain, bold, crafty or timid. These indications are called natural language or pathognomy.

Of how many organs does the brain consist?

It must consist of as many as there are mental faculties. At present, phrenologists admit about thirty as distinctly established; others they speak of as conjectural; but these are not to be regarded as constituting the whole series. Probably about the base of the brain there exist organs whose functions are yet to be discovered.

Are the organs single or double?

As the brain is double, so is every organ; each has its fellow on the opposite side. There are thus, strictly speak-

6 In many animals, however, we can draw no inference by looking at the head merely. In the full grown elephant, for instance, an immense cavity or sinus intervenes betwixt the brain and the outer table of the skull.

ing, about sixty organs ascertained; but as an organ on one side coöperates with its fellow on the other, it is customary to speak of the two as one, seeing that they manifest only a single mental quality.[7]

May the brain be wounded or diseased on one side, and yet none of its faculties be suspended? Supposing, for instance, that the organ of Tune is injured on one side, does the person inevitably lose all love for, and appreciation of, music?

Not necessarily; for, the sense of music residing in both organs, the one which is unimpaired will retain its faculty as usual; and the same law holds with regard to all the other organs, just as a person can see although he has lost one of his eyes. Injury, however, of one side of the brain generally affects the other sympathetically; although the fact that it sometimes does not, and that the faculties go on little impaired, is a sufficient proof, both that there is a plurality of organs, and that the organs are double.[8]

7 The brain is divided into two hemispheres, in both of which there is an organ of each faculty. These are not always of the same size. Generally speaking, one ear hears better than the other, and one eye is more open, and sees better than the other. Some children are right-handed, while others have naturally more strength in the left, although the habit of being taught to use the right principally, often reverses the intention of nature. When people remain left-handed in spite of education, the original difference must have been greatly in favor of the left. The same rule holds true with the other faculties; a person may think more with one half of the brain than with the other.—*Am. Editor.*

8 Careless observers often bring it as an argument against phrenology, that in cases of diseased brain, the mind is not at all affected, when some of its functions are, in reality, materially disordered. They perceive that the person, in common matters, acts perfectly well; that he answers questions intelligibly and soon; whereas, if they were to investigate the matter more fully, and task the different organs severely, they would perceive in the manifestations of some of them a considerable falling off. The above argument, supposing it to be true, would only go to prove that the mind has no connection with the brain; a proposition so absurd that no sane intellect can now for a moment entertain it; but why should the argument bear more against phrenology, which teaches that each faculty of the mind is manifested by a particular part of the brain, than against the opposite doctrine that the *whole* brain is concerned in the manifestation of each faculty? We may as well expect perfect digestion from a diseased stomach, as perfect mind from a diseased brain.

Are we always to expect a prominence or bump when a particular organ is large?

No. If several adjoining organs are all large, none of them will, probably, present any particular projection; there will be merely a general fulness in the locality occupied by them. It is only when an organ decidedly predominates over those in its immediate vicinity, that a protuberance is to be looked for.

Does Phrenology admit of exceptions?

It does not. A single exception would entirely overthrow whatever part of the phrenological doctrine it should be at variance with. When an apparent exception does occur, it must be attributed to ignorance on the part of the observer, or to a want of health in the brain. Taking mankind in the mass, a skilful phrenologist will infer character with great accuracy, in nineteen cases out of twenty. It is not pretended, however, that practical phrenology has yet attained to perfection.[9]

How are the faculties classified?

The faculties are divided into two orders. The FEELINGS or AFFECTIVE FACULTIES, and the INTELLECT. These again, are divided into genera—the FEELINGS into the

9 The reputation of phrenology has been often endangered by the abortive attempts of ignorant pretenders to infer character from examination of the head. Before this can be done properly, not only much experience, but a good share of tact and analytical talent are necessary. There are two risks to be encountered; that of estimating erroneously the size of the different organs, and that of drawing faulty conclusions from the estimate, even supposing it to be true. Spurzheim was strongly opposed to the practice now so much in vogue, of *indiscriminately* inferring character from examination of the head. Where the character is a marked one, the science may be benefited by observing how far the talents and disposition correspond with the form of brain, possessed by the individual; but how seldom is it that we meet with marked characters! These observations are the more necessary, as there are a set of phrenological quacks, who, on all occasions, undertake to tell the character of any person, however commonplace. Some make a a regular trade of it, and have a fixed charge; thus degrading the science into a piece of contemptible legerdemain.

Propensities and *Sentiments*, and the INTELLECT into the *Perceptive* and *Reflective Faculties*. This arrangement is not unobjectionable, but in the present state of our knowledge, a perfectly accurate classification of the faculties cannot be attained.

ORDER I.—FEELINGS OR AFFECTIVE FACULTIES.

What are the feelings, or affective faculties?

They may be described simply as those faculties which give rise to affections or emotions, and which neither know nor reason.

GENUS I.—PROPENSITIES.

What is a propensity?

The term *Propensity*, is applied by Dr Spurzheim, to those affective faculties which produce only desires or inclinations, and which likewise prompt to certain corresponding modes of action. The classification of the faculties, however, is not altogether in accordance with this definition.

1. Amativeness.

Where is the organ of Amativeness, or sexual love, situated, and what is its function?

The cerebellum, or little brain, which lies in the lower and posterior portion of the skull, immediately under the cerebrum, or brain proper, and behind the top of the spinal marrow, is the seat of this propensity. The continuance of the species is the great end served by Amativeness.[10]

What external indications are presented when the organ is very large?

There is much fulness at the back and lower part of the

10 The effect of diseased cerebellum in calling this faculty into vehement action, sufficiently proves that it has its locality in this particular part of the brain. The circumstances which led Dr Gall to the discovery of the organ are curious, and are fully detailed in his own great work, and in the writings of Dr Spurzheim.

head, an unusual distance between the mastoid processes,[11] and great thickness of the neck. It is a common remark that thick-necked people are amorous.

Is the organ larger in men than in the other sex?

It is generally larger in men. Women in whom it is large are, *cæteris paribus*, more easily seduced than those with a small development: it is generally very large in those unfortunate females who walk the streets, and gain a livelihood by prostitution.

In what state is the organ in children?

Very small; not only absolutely but relatively. In new-born children the cerebellum is to the rest of the brain as 1 to 13, 15, or 20. In adults it is as 1 to 6, 7, or 8.

When does the organ attain its full size?

In the male, between the ages of eighteen and twenty-six; in the female a little earlier. Young lads are indifferent about female society, and young girls about that of men. As the organ in question, however, enlarges, a change is produced in the feelings of the sexes, and they become fond of associating with each other.

Is there any thing particular in the action of this organ as respects the inferior animals?

There is. In most of them it is periodically excited; being at other times in a great measure inactive.

2. Philoprogenitiveness.

Describe the locality of this organ.

It lies immediately above Amativeness, and when large, gives a drooping appearance to the back of the head, which projects much, and hangs, as it were, over the neck.

What is meant by Philoprogenitiveness?

Love of young. Its tendency is to bestow an ardent attachment to offspring, and children in general; and,

11 Those hard prominences immediately behind, and at the root of the ear.

according to some phrenologists, to weak and tender animals.

In which sex is it largest?

In the female; and this law extends to the lower animals as well as to our own race. Boys exhibit little of it; the case is different with little girls, who show its activity in their fondness for dolls, and in their desire to carry children in their arms, even when they can scarcely stand under their weight. Mary Wolstoncroft denies that girls have, by nature, a greater fondness for dolls than boys, ascribing the difference to education; but she is clearly mistaken, in so far as the organ on which the love of young depends is decidedly larger in the female head than in the male. The fondness of unmarried women, or married women who are childless, for cats and lap-dogs, probably depends upon this organ.

In which of the lower animals is it peculiarly large?

In the monkey tribe, whose affection for their young is quite remarkable. It was the size of the organ in these creatures, coupled with their love of offspring, that led Dr Gall to suspect the faculty connected with this portion of the brain.

Do all animals display love of offspring?

No. The cuckoo (both male and female) abandons its offspring, and leaves them to be brought up by other birds. Many male animals take no charge whatever of their young, while others do so conjointly with the females. Such is the case with the fox, the wolf, the roebuck, the rabbit, and various others.

Does love of children not rather proceed from general benevolence?

No. For persons who have little of this virtue are often passionately fond of children, and others who have a great deal of benevolence, are indifferent about them. The

most ferocious savages are often extremely affectionate towards their children.

What is the result of a small development of the organ?

Indifference to children. It is a great evil when a mother is so constituted; for however estimable she may otherwise be, she will find the rearing of her offspring a toil rather than a pleasure; and, unless her conscientiousness and prudence be great, she will be very apt to neglect them. No woman will make a good nurse unless well endowed with this organ. Women who commit infanticide have generally a small development of Philoprogenitiveness.[12]

What is the result of a great development?

An ardent love of children. The person delights to take them on his knee, to kiss them, to relate stories to them, to play with them, &c. Some of the sternest minds and greatest heroes have been distinguished for the strength of this feeling. Agesilaus, the warlike monarch of Sparta, used to ride on a stick to please his children. On one occasion, King Henry IV, of France, was seen galloping on all fours, one of his children on his back, and the other flogging him with a whip. The passion must have been very strong

12 Dr Spurzheim has examined thirty-seven child-murderers, and in thirty of them the organ of Philoprogenitiveness was very small. "In women," says he, "as well as in the females of animals, this propensity has different degrees of energy. Certain cows do not suffer their calves to suck; some pigs, cats, rabbits, &c. kill their young, while other females of the same kind of animals cry for several days, and refuse to eat, when they are bereft of their offspring. It is a lamentable truth that this difference of motherly love exists also in mankind. All women do not desire to become mothers; some consider their pregnancy as the greatest misfortune. Several mothers seek various pretexts in order to remove their children out of the house. There are others who, being freed from shame, reproach, misery, and many inconvenienes, by the loss of their illegitimate children, yet shed tears for a long time after at the remembrance of them. Others, on the contrary, see their legitimate offspring buried without a pang. Thus, it is beyond doubt that natural love of offspring is very weak in some women. It is, therefore, wrong to believe that infanticide is a more unnatural act than any other murder."--*View of the Elementary Principles of Education*, p. 319.

in these illustrious men. Children have an almost instinctive knowledge of persons in whom this organ is large, and come to them, as it were, intuitively.

What are the abuses likely to result from too great a development of Philoprogenitiveness?

If the feeling be excessive, and not regulated by the influence of other faculties, the children will be apt to get spoiled, and become pert, noisy, unmannerly, and self-willed. Philoprogentiveness sometimes becomes diseased, and then there is the most violent love of offspring, with overwhelming grief, often terminating in madness, at their loss.

3. Concentrativeness.

Where is Concentrativeness situated?

It lies immediately above Philoprogenitiveness, and below Self-Esteem.

What is the purpose served by this organ?

It is believed by the Scotch phrenologists to be the seat of that power which enables us to direct the intellect continually to a particular subject of thought. Persons with a large endowment are not apt to be distracted from what they are engaged in, by extraneous circumstances.

When deficient, what is the consequence?

The individual is remarkable for great volatility of manner, and extreme difficulty in directing his mind for a length of time towards any one subject. He is continually flying from topic to topic, and finds it almost impossible to pursue a continued train of investigation. Scatter-brained, flighty people, are all deficient in Concentrativeness.

May good abilities co-exist with deficiency of this organ?

Most undoubtedly, but such a combination is to be regretted, as they are thus deprived of half their efficiency.

When the energy of Concentrativeness is excessive, what is apt to be the result?

Absence of mind, or abstraction.

Has Concentrativeness the same power over all the faculties?

Probably not; it appears to act more influentially on some than on others. I conceive, that the faculties concerned in reasoning and calculation, are, in an especial manner, governed by it; hence, metaphysicians, mathematicians, &c., are peculiarly subject to mental absence.

Are Phrenologists agreed on the function of this organ?

No. Dr Spurzheim conceived it to be the source of attachment to particular places;[13] hence, he called it Inhabitiveness. With the views of the Scotch phrenologists he never coincided, and by both parties the subject is left for farther investigation.

Mention a few authors whose writings are distinguished by Concentrativeness?

Campbell, Pope, and Byron, all display a vigorous concentration of thought and style. In Scott, Coleridge, and Wilson, there is much less. We may infer, (supposing us to have properly localised this faculty) a great development of the organ of Concentrativeness in such men as Tacitus, Thucidydes, Reid, Locke, and Brown; and less in Dugald Stewart and Beattie. Archimedes, Newton, and Adam Smith, must have possessed the faculty in vast energy.

13 *Amor Patriæ* was supposed by Dr Spurzheim to result from inhabitiveness, but I have never been able to see that one organ is necessary to give attachment to places, and another to give attachment to persons. The question has been often asked, Why are mountaineers more ardent patriots than the inhabitants of the plains? Supposing the fact to be true, we are not justified in inferring, that the former are patriots merely because they happen to be mountaineers, but because they are secluded, and have little opportunity of getting their views expanded into cosmopolitanism. The more the intellect is enlightened, the less vivid does that ardent attachment to one's *natale solum*, which often constitutes patriotism, become. Savages are the most attached to their native land.

4. Adhesiveness.

Describe the situation and function of this organ.

It lies at each side of, and rather above, Philoprogenitiveness, and is that portion of the brain with which the feeling of attachment is connected.

Does this feeling appear at an early period, or is it, like some others, of later growth?

No feeling, save Destructiveness, is displayed more early than this; it is exhibited even by the infant in the nurse's arms.

When very strong, to what results does it lead?

The individual so gifted, will be remarkable for the strength of his attachments; he will be the warmest of friends.

Does this faculty constitute love?

Not strictly speaking; for love, in the legitimate sense of the word, is a compound of Amativeness and Adhesiveness. Such is the love which the lover bears to his mistress, and the husband to his young wife. The attachment of a parent to his child, or of a brother to his sister, is not, in reality, love, but strong Adhesiveness powerfully aided, in the former case, by Philoprogenitiveness.

Is this faculty most energetic in men or women?

Generally in the latter; although in men there are not wanting instances of the most violent attachments, even towards their own sex. Such is represented to have been the case with Pylades and Orestes, and with Damon and Pythias, whose attachment to each other (the result of excessive Adhesiveness) defied even death itself. What beautiful pictures of friendship between men, have been drawn by Homer, by Virgil, and by the sacred writers, in the instances of Achilles and Patroclus, of Nisus and Euryalus, and of Jonathan and David!

Can this faculty exist along with deficient Benevolence?

Facts prove that it may. Robbers and murderers sometimes display such wonderful attachment to each other, that even the rack has failed to extort from them the names of their accomplices in crime. Mary MacInnes, who was executed for murder, had a great development of this organ, and displayed its function with much energy on the scaffold.

Is the faculty subject to abuse?

Very frequently it is so. Young women and sometimes young men, are apt to form absurd and romantic attachments to each other; which, however, being based upon an unnatural state of excitement in the organ of Adhesiveness, necessarily terminate so soon as the excitement ends; and thus unless there are eminent moral qualities to ensure permanence, the feeling is seldom of long duration. When a coldness once takes place, mutual antipathy often follows, and the quondam friends become bitter enemies. People laboring under the strong influence of this organ, are often incapable of perceiving any thing like blemish in their friends. They clothe them with the attributes of perfection, and employ the most extravagant terms of praise when speaking of them to others. Clanship, when improperly directed, and attachment to worthless characters, are abuses of the faculty.[14]

---

14 I knew two gentlemen whose attachment to each other was so excessive, as to amount to a disease. When the one visited the other, they slept in the same bed, sat constantly alongside of each other at table, spoke in affectionate whispers, and were, in short, miserable when separated. The strength of their attachment was shown, by the uneasiness, amounting to jealousy, with which the one surveyed any thing approaching to attention and kindness, which the other might show to a third party. This violent excitement of Adhesiveness continued for some years, but gradually exhausted itself, or at least abated to something like a natural or healthy feeling. Such attachments are, however, much more common among females than among the other sex. On account of the energy of this feeling in women, seduction should be punished with great severity.

5. Combativeness.

Where is this organ situated?

Between the mastoid process, and the organs of Philoprogenitiveness and Adhesiveness. It corresponds to the inferior angle of the parietal bone, and lies immediately behind, and on a level with, the top of the ear.

In what manner does the faculty manifest itself?

In a love of opposition and strife. It gives boldness to the character. The combative man loves danger, meets it fearlessly, and triumphs over difficulties, which would overwhelm a person in whom the organ was feebly developed.

Can you mention any class of men in whom the organ is large?

It is invariably large in great heroes, in determined prize-fighters, and in men any way remarkable for active courage. The gladiators of Rome, must have been largely endowed with it. It is remarkably prominent in the skulls of Robert Bruce and General Wurmser, who were both pre-eminent for valor. It was very large in the head of the French general, Lamarque, whose courage was remarkable, and appears greatly developed in the likenesses of Duguesclin, another French warrior distinguished for his extraordinary valor. In the skull of Robert Burns it is very large, which accounts, in some measure, for his controversial propensities. The character of Balfour of Burley, as delineated in "Old Mortality," is a remarkable instance of Combativeness, Destructiveness, and Firmness, all greatly developed. The same remark applies to the character of Charles the Bold, as displayed in "Quentin Durward." The history of Murat, and of Marshal Ney, "the bravest of the brave," presents, in great perfection, the picture of excessive Combativeness. Rompishness in women depends upon this organ.

Is a man with much Combativeness necessarily addicted to fighting, or other varieties of contention?

Such is the natural tendency of his mind, although, in common circumstances, he may, by means of other faculties, keep the one in question, sufficiently under restraint. If Destructiveness be moderate, and Benevolence large, some kind of harmless contention will be preferred.

Are all nations equally endowed with this faculty?

No. The organ is small in the Hindoo and Peruvian heads, and exceedingly large in the Carib; and the dispositions of these nations are in perfect accordance with their respective developments—the two former being mild and unwarlike, the latter immoderately fond of fighting.

What happens when the organ is too large, or not sufficiently controlled by others?

The consequences are lamentable. The individual is forever engaged in quarrels, and getting himself involved in difficulties, from his ungovernable love of contention.

What is the result when the organ is very small?

In such a case, the person abhors strife and competition of every kind, and purposely avoids it. His temper may be warm, but he will seldom have courage to display it in the form of blows. The very reverse is the case with the combative man. Should Destructiveness also be full, he is very apt to strike on all occasions, if insulted. "A word and a blow" is his favorite maxim. He is a profound admirer of the *argumentum ad hominem;* his *forte* is the *fortiter in re.*

Are the consequences of a large development of this organ as strongly marked in the lower animals as in the human race?

They are. The poodle, the pointer, and the spaniel have the organ small; the bull dog and the mastiff, large; and the dispositions of the animals correspond.

6. Destructiveness.

What quality results from this organ?

The tendency to destroy, and the passion for destruction; the propensity to inflict pain, uneasiness, and injury in general.

What follows when the organ is very large, and not controlled by the influence of Benevolence?

The result is unmitigated cruelty. The person is fierce, passionate, revengeful and ferocious.

When well regulated what is the result?

Warmth of feeling, irrascibility without cruelty, and a tendency to be severe, on proper occasions.

How is the existence of a large Destructiveness known?

By a considerable and rounded fulness above the opening of the ear, and by width of the head at that part. Those whose heads are flat in this situation, and narrow above the ears, are never destructive.

How was the organ first ascertained?

Dr Gall first noticed it by observing the difference, at this particular situation, between the heads of carnivorous[15] and graminivorous animals. In the former the quantity of brain in the region of Destructiveness is great: in the latter the reverse.

Does a large development communicate any particular character to the manner and expression of the individual?

Yes: destructive people have frequently a sharp sparkling eye, a loud and often cutting voice, quickness of movement, and energy of character. When engaged in disputation they are apt to get fierce and animated, strik-

---

15 All carnivorous animals are necessarily destructive. Some of them, such as the wolf, the fox, the bear, and the lion, kill only to procure food; others from a mere blind pleasure in killing, as is the case with the tiger, the hyena, the pole-cat, the marten and the weasel.

ing the table as if to enforce their positions; and speaking in a loud and irritated manner.[16]

Mention the class of persons in whom a large development may be expected?

Distinguished warriors, duellists, sportsmen, and boxers, and severe and sarcastic polemics must be well endowed with the organ; so must surgeons, who are passionately fond of operations, and men who, from choice, follow the trade of a butcher. In such men as Knox and Luther, it, in combination with Combativeness, must have been large. It was very large in the head of Robert Bruce. To satire it gives edge, and may be looked for in such writers as Pope, Burns, Byron, Swift, and Smollet. In the heads of the murderers, Hare, Burke, and Bellingham, it was large and must have been excessive in those of Nero, Caligula, Murat, Danton, and Robespièrre.[17]

Supposing you found Destructiveness as large in a person of distinguished benevolence as in a notorious murderer, would that not strike you as an argument against phrenology?

It would not. The benevolent man has other faculties which keep it in check, and prevent the display of its more violent manifestations; the murderer has no such restraints. The late Dr Gregory, and Mr Abernethy, the

16 The frequent indulgence in Destructiveness gives coarseness of manners; "whence," as Lord Kames inquires, "the rough and harsh manners of our West India planters, but from the unrestrained license of vending ill-humor upon their negro slaves?"

17 Calvin, who burnt Servetus over a slow fire, for differing with him on a point of theology, must have had a large endowment of this organ. Both Combativeness and Destructiveness appear very large in the portraits of Bonner, Bishop of London, a man of violent character, and coarse both in his manners and language, and who, in the reign of the Bloody Mary, consigned to the flames, not fewer than 200 individuals for their religious opinions. Caliban, in Shakspeare's play of the "Tempest," is an incarnation of pure Destructiveness.

distinguished and eccentric surgeon, had probably as large organs of Destructiveness, absolutely speaking, as Bellingham; but in them it was controlled by energetic, moral, and intellectual faculties while the miserable assassin of Perceval being wofully deficient in these, was left to the unbridled sway of his lower propensities, and revelled in vice. Thus, although the positive size of Destructiveness may not have been larger in him than in them, yet its relative dimensions, in proportion to the organs of the moral feelings, was infinitely greater, and hence the criminal tendencies of his depraved mind.

Thurtell, the murderer, had a tolerable endowment of Benevolence. How do you reconcile this with the commission of the atrocious crime which cost him his life?

Thurtell frequently showed traits of benevolent feeling, and was on this account, rather popular with his associates. His Benevolence, however, was no match for the excited energy of his great Destructiveness, and other animal propensities; and a phrenologist, on examining his head, so far from inferring it to be that of an amiable or virtuous character, would conclude, that it belonged to one strongly addicted to low indulgencies, and when in a state of excitement, to acts of violent outrage. When the propensities were not in this excited condition, he would manifest good nature and benevolence, and the annals of his life show that he was very capable of kind actions.[18] It is phrenolo-

18 Some people foolishly imagine, that when a man is hanged for taking away life, he must needs be totally destitute of Benevolence; not reflecting, that people are always governed by the strongest motives, and that if, in an unhappy moment, Destructiveness is so furiously excited, as to overpower the counteracting effect of Benevolence, it must lead to violent, and frequently fatal results. Had Thurtell possessed a very poor development of Benevolence, his head would have afforded a strong argument, that phrenologists were in error respecting the locality of this organ, in so far as, in accordance with such a development, his whole actions should have been characterized by a destitution of benevolent feeling, which was very far from being the case.

gy alone which can explain these apparent anomalies of character. Men of far higher moral powers than Thurtell, have been hanged for murder, committed in a moment of violent passion, under the influence of a provoked and ungovernable Destructiveness.

Mention a few instances of the way in which Destructiveness often manifests itself.

It is shown in a love of hunting, rat-killing, dog-fighting, and attending public executions. It is told of La Condamine, that on one occasion, making efforts to penetrate the crowd assembled to witness an execution, and being pushed back by the soldiers, the executioner said, "Let the gentleman pass, he is an amateur." The mischievous habit of breaking windows, gates, posts, and trees, so common in this country, is a manifestation of the faculty, so is the common and atrocious crime of fire-raising. A passionate child kicks the stool over which it stumbled; this simple act proceeds from Destructivenes. People who indulge in abuse are all destructive. Cursing and swearing are displays of the propensity. Xantippe, the wife of Socrates, was highly destructive; so was Catherine, in the comedy of the "Taming of the Shrew," and so are the whole family of scolds and termagants. Clergymen who address themselves much to the fears of their audience, and dwell strongly upon the terrors of future punishment, have this organ large.

Is Destructiveness often violently roused?

Moir, who was executed for shooting, in a fit of violent passion, a fisherman, who had grossly insulted and outraged him, was understood to be a very benevolent man, when his ungovernable temper was not roused into activity. It would be absurd to expect, in such a head, a small organ of Benevolence, and yet he was hanged for murder. A man was executed in Glasgow, a few years ago, for stabbing a person, by whom he was overpowered, in a fight which took place between them, when half drunk. This man's previous character was not only fair, but excellent.

No organ is so frequently in a state of excitation. You cannot cross the street, or sit an hour in the company of people of different religious or political sentiments, without seeing it called into action. If you behold a cat pouncing upon a mouse, or two dogs growling at each other about a bone, you have an instance of the faculty being at work. Homicidal monomania is the effect of a diseased excitement of Destructiveness, and many miserable lunatics have perished on the scaffold, for homicides committed under its influence. Great ignorance prevails among judges and juries with regard to this subject.[19]

When does Destructiveness first display itself?

At the moment of birth. The angry cries of the newborn child are manifestations of the faculty.[20]

---

19 I saw a man, named Papavoine, guillotined at Paris in 1825, for murder. On reading his trial, I was strongly impressed with the idea, that the crime was committed under the influence of insanity, and that the man ought not to have been put to death. This view of the case has been since adopted in works on insanity, and is now admitted to be sound. The same year, I witnessed at Versailles, the decapitation of a miserable wretch, convicted of murdering, and of afterwards eating the flesh of his victim—a young girl against whom he entertained no animosity whatever. When apprehended, he had plenty of money upon him, a proof that he was not impelled by want. He could give no motive for the dreadful crime, but an insatiable desire to eat human flesh. Gaulius speaks of a man who had a similar passion, and who, to gratify it, committed many murders. His daughter, though separated from him, and well brought up, yielded to the same horrible desire, and became also a cannibal. "At the commencement of last century," says Spurzheim, "many murders were committed in Holland upon the frontiers of Cleves. The author of these crimes was, for a long time unknown, but at last an old musician, who was in the habit of playing the violin at all the weddings in the neigborhood, was suspected, in consequence of some remarks which escaped his children. Being brought before a magistrate, he acknowleded thirty-four murders, and declared that he committed them without animosity, or wish to rob, but simply because he felt therein an extraordinary degree of pleasure." The whole of these persons were, unquestionably, monomaniacs.

20 An irritable frame calls Destructiveness into play; hence the frequent ebullitions of temper displayed during the reign of childhood, and also by grown people who labor under bad health. "No man," says Lord Bacon, "is angry who feels not himself hurt; and therefore, delicate and tender persons must needs be often angry, they have so many things to trouble them, which more robust natures have little sense of."

Are destructive people necessarily brave ?

No. They are often great cowards when brought to face real danger. Valour depends upon Combativeness. At the same time, Destructiveness sharpens the faculty, and adds much to its energy on the field of battle. Firmness gives endurance to both these faculties, and prevents them from rapidly exhausting themselves.[21]

What results from a want of Destructiveness ?

The mind is deficient in fire and edge, and in that degree of severity which is of great use in the business of life. Without this faculty there could be no operative surgeons, no killing of animals for the purposes of food, no energy of character among mankind.

+Alimentiveness.

What is meant by this term ?

Alimentiveness is the name applied to one of the organs, not yet regarded as fully ascertained; it is supposed to be connected with the desire for food. In the bust, it bears no number, but is marked +; it lies in front of, and a little above the opening of the ear. Farther observations are necessary, to determine whether the functions assigned to this part of the brain be correct.

When very large, in what manner does it display itself ?

It is supposed to bestow an inordinate fondness for indulging in the pleasures of the table. If this belief be

21 A man is met on the highway by a robber, who presents a pistol to his breast, and demands his money. If the man is greatly endowed with Firmness, but deficient in Combativeness, he will sternly refuse to surrender his purse, but do nothing more. If he posseses, along with Firmness, a great deal of Combativeness, he will be inclined to rush forward, and wrench the weapon from the hand of his assailant. Here the functions of Combativeness will cease; but supposing the individual to be largely endowed with Destructiveness also, he will endeavor to knock the aggressor down, to punish him with severity, and perhaps kill him on the spot. In most persons, however, Destructiveness is large enough to give rise to such manifestations in the circumstances supposed.

correct, gluttons and epicures ought to be well endowed with the organ, and probably drunkards also. Indeed, Dr Caldwell of Lexington, in his ingenious "Thoughts on Intemperance,"[22] conceives the habit of drunkenness to depend upon a highly excited state of this organ, and proposes to cure it by means of local applications. It is certain that, by nature, some people are much more addicted to eating and drinking than others, and it can hardly be doubted, that these propensities depend upon a special organ.

What are the abuses of this faculty?

Gluttony[23] and drunkenness.

Love of Life.

Does the Love of Life depend upon a particular organ?

It is so conjectured by phrenologists, who conceive that

---

22 Published in the Transylvania Journal of Medicine, July, &c., 1832. See also Phrenological Journal, vol. viii. p. 624.

23 In the Journal of the Phrenological Society of Paris, the case of a woman, called Denise, detailed in the "Annales de la Médecine Physiologique," (October, 1832) is taken notice of, as furnishing a curious example of insatiable appetite for food. In infancy, she exhausted the milk of all her nurses, and ate four times more than other children of the same age. At school, she devoured the bread of all the scholars; and in the Salpétrière it was found impossible to satisfy her habitual appetite with less than eight or ten pounds of bread daily. Nevertheless, she there experienced, two or three times a month, great attacks of hunger, during which she devoured twenty-four pounds of bread daily. If, during these fits, any obstacle was opposed to the gratification of her imperious desire, she became so furious, that she used to bite her clothes, and even hands, and did not recover her reason till hunger was completely satisfied. Being one day in the kitchen of a rich family, where a dinner party was expected, she devoured, in a very few minutes, the soup intended for *twenty guests*, along with *twelve* pounds of bread. On another occasion, she drank all the coffee prepared for *seventy-five* of her companions in the Salpétrière. Her skull is small; the region of the propensities predominates.

In the head of a semi-idiot, named Hugh Barclay, who was executed at Glasgow for murder, the organ of Alimentiveness was very large, and the excessive craving for food corresponded. He clamored for it shortly before being brought upon the scaffold, and on the morning of his execution, ate a breakfast which would have sufficed for three healthy men.

a portion of the lower and inner side of the middle lobe of the brain is the seat of this feeling. Facts, however, are more deficient here, than even with regard to the organ of Alimentiveness. It is highly probable, that Love of Life depends upon a special organ, for we do not always find, that those whose lot has been most fortunately cast, as respects riches, health, and other things considered worth living for, set the highest value upon existence. The wretched and half-starved mendicant often dreads the termination of life more than the happy and the prosperous, and this altogether without any reference to a future state and its punishments. Dr Johnson had an extreme terror of death. If this feeling has a special organ, the latter must have been large in him. Dr Thomas Brown treats of "the desire of continued existence" as a special faculty.

7. Secretiveness.

Describe the position of this organ?

Secretiveness is situated immediately above Destructiveness, as may be seen, by referring to the bust. When the latter organ is very large, and comes high up, it may be mistaken for Secretiveness, by the inexperienced observer. In like manner, Secretiveness and Acquisitiveness are sometimes confounded with Ideality—such happened in the case of Hare, the murderer, in whose head the enemies of phrenology ignorantly affirmed, that Ideality was large, when it was entirely the reverse. These mistakes arise from the organs in question encroaching more than is usual upon the neighboring ones, but an experienced investigator will never fall into them. Secretiveness, when large, gives a general breadth of head at the back part of the temple.

What is the tendency of Secretiveness?

To conceal.

What is the character of a very secretive person?

He is reserved, and neither open nor explicit; is fond of stratagem and fineness, and delights in mystifying and deceiving. His pace is stealthy, his voice soft, his eyes sidelong, and he can hardly look an acquaintance in the face. A person with much Secretiveness is very fond of prying into the affairs of others, unless his mind be of a superior cast.

From what does cunning result?

From the excessive size and activity of this organ. Secretiveness, however, if well regulated by the intellect and moral sentiments, does not display itself in cunning, which is an abuse of the faculty.

Has Secretiveness any thing to do in the production of taciturnity?

It has. Taciturnity arises from Secretiveness and Cautiousness, accompanied, generally, with a small development of Language, and, in many cases, of Love of Approbation.

What good purpose is served by Secretiveness?

It communicates a power, often highly valuable, of hiding the manifestation of unpleasant feelings, which, without such restraint, would be sure to burst forth. It also gives us an insight into the feelings of others, and suspicion of their motives; hence secretive people are not easily imposed upon, and possess singular facility in detecting imposture, and seeing through plausibility and pretension. Secretiveness is of eminent use in war and diplomacy. Hannibal in the field, and Talleyrand in the cabinet, sufficiently prove the truth of this remark. Secretiveness is the chief ingredient in what is called tact.

Is Secretiveness requisite for an actor?

No person can be a good performer without it. The actor must sink his own character in representing another;

and this is chiefly effected by virtue of Secretiveness. Where Imitation exists, as it always does in good actors, the process is still more complete.

Is it an element in humor?

It enters very fully into what is called dry humor, such as that of Dean Swift and Cervantes, where the writer, under the disguise of the most perfect simplicity and gravity, convulses us with laughter. Broad humor, such as that of Smollett and Rabelais, requires less of it, and into Irish humor it very sparingly enters.

What is the character of a person deficient in this faculty?

He is remarkable for candor and openness, speaks his mind freely, and is under little restraint. People of this kind ought never to be entrusted with a secret, as they feel a continual effort necessary to prevent them from divulging it.

Is the faculty active in any of the lower animals?

In many of them it is so, and their craft is generally, though not always, in proportion to the weakness or helplessness of the animal. The cunning of the fox and cat is proverbial. Most birds are astute—witness the admirable manner in which the nests of many of them are hid from observation. The crocodile and turtle seem to show Secretiveness in the skilful manner in which they hide their eggs in the sand; unless, indeed, we can suppose, that in so doing, they are guided by a particular blind instinct. Craft enables some animals to secure their prey, and others to avoid danger.

8. Acquisitiveness.

Where is this organ situated?

At the anterior, inferior angle of the parietal bone.

What is the nature of its faculty?

To acquire and accumulate.

What would you expect of a person who had a large development of this organ, with deficient Conscientiousness?

That he should be thievishly inclined. If placed in unfavorable circumstances, it is hardly possible for him, with such an organization, to be otherwise than a thief.

Suppose him favorably situated, would he act the thief?

Possibly not. His pride, Love of Approbation, or terror of discovery, might prevent him from stealing; but still, at heart, he would be a thief, and covet every thing he saw.

What is the chief manifestation of a very powerful Acquisitiveness?

An inordinate lust after riches. The person becomes a miser; the whole aim of his life is to hoard; and the loss of money he regards as the greatest of misfortunes. So strong is this feeling, that many persons, though wallowing in wealth, scarcely allow themselves the common necessaries of life. Such was the case with Elwes, who lived in great want and misery, although immensely rich; his fortune, at the time of his death, amounting to £700,000. Daniel Dancer, the miser, who left £60,000, slept for many years in an old sack, to save the expense of bedding; and never, even in the severest weather, allowed himself the luxury of a fire. He sustained life by begging, and literally died of starvation. The Duke of Marlborough, though worth £50,000 a year, might be seen darning his stockings at the head of the army, and would walk home from the theatre on a rainy night to save sixpence.

May a miser be a benevolent man?

He may; but he will show his benevolence in some other way than in giving money. Although he may exert himself vehemently, and spare no trouble to oblige a friend, it will be difficult or impossible to make him open his purse. It must be admitted, however, that the tendency of excessive Acquisitiveness is "to harden the heart, and petrify

the feelings." Gold is the miser's divinity; he worships it as an idol, and extends his veneration to all who have a large share of it; hence, wealthy people, however despicable their character, are apt to be held in profound respect by the acquisitive.

Are very acquisitive people generally happy?

They are not. Having generally but one source of felicity, that of hoarding money, they are fretful and discontented, when their efforts at accumulation fall short of what they calculated upon; the loss of money annoys them exceedingly, and while they venerate, they, at the same time, envy those who are richer than themselves.

What is the result of small Acquisitiveness?

Indifference about making, and profusion in spending money.

Does Acquisitiveness lead to the accumulation of money alone?

No; it may show itself in accumulation of any kind. Some people are fond of hoarding books, medals, coins, curious shells, &c.; if a person has a liking for these things, and possesses large Acquisitiveness, he will naturally collect them, especially if this can be done at little expense.

Does this faculty display itself in early life?

When strong, it is manifested at a very early period. There are vast differences among children in this respect; one gives half of what he has to his playmate; another keeps all to himself; one school-boy will keep a half-penny in his pocket a week before he has the heart to spend it; another gets quit of his little treasure almost as soon as it is in his possession.[24]

24 The great Prince of Condé having occasion to go from home for some time, gave to his son, a young lad, eighty *louis d'or* for pocket money. On his return, the careful youth showed him the money, exclaiming, "see, father, there is all the money you gave me, and I have not spent a single sous of it." The Prince was so disgusted with the penurious spirit of the lad, that he took the money and

Does old age whet or diminish the activity of this organ?

It aggravates it to a great degree. A careful boy will make a miserly man. Avarice is the only passion which age does not blunt.[25]

Would you not infer the contrary seeing that theft is more common in early years than at a later period?

Children steal more readily than grown people, because their caution and reflection are less. Adults see more clearly the consequences to which a discovery of theft would lead; and a man has naturally more respect for his reputation than a child. The desire of a man to possess any thing may be as strong as a child's; but to obtain it he will not readily adopt means which may involve him in disgrace.

May a thief be a benevolent man?

Undoubtedly. He may rob you to-day, and relieve you to-morrow with a liberal hand, if you are in distress. This fact may be easily verified by referring to the lives of famous pickpockets and highwaymen. George Barrington is a remarkable case in point. The celebrated outlaws, Robin Hood and Rob Roy, were instances in which a great deal of benevolent feeling co-existed with large Acquisitiveness, and deficient Conscientiousness.[26]

---

threw it into the street, telling the young miser that if he had not the manliness to spend it upon himself, he ought to have given it away.

25 Why age should sharpen Acquisitiveness, while it blunts the other faculties, it is difficult even to conjecture, but the fact is undeniable. A good story is told of an old Scotch nobleman, one of the Earls of Findlater, I believe, who having found a farthing, and being solicited for the same by a beggar who saw him pick it up, put it carefully into his pocket, saying, "Na, na, puir body; find a farthing for yoursel."

26 The passion for thieving is, in some individuals, so immoderately strong, as absolutely to amount to a disease. In such cases, it bears an analogy to homicidal monomania, or the irresistible desire to commit murder. The following case of thieving monomania I extract from the London papers. Confirmed thieves seem all to labor under this affection:

Central Criminal Court.—Henry Smith, a smart lad, aged thirteen, was con-

To what does the legitimate exercise of Acquisitiveness lead?

To a rational accumulation of wealth for proper purposes; as for the sake of securing comfort and independence to one's self and family. Carried much beyond this point, it is a contemptible vice, degrading to a human being.

Does the size of the organ differ in different nations?

Very much. It is said to be small in the Carib, the Arragonese, and Castilians; and these people are not at all given to stealing. The Calmucs, who are notorious thieves, have a large development of the organ. It is generally large in Scotch, English, and Dutch heads; hence the vast fortunes acquired, and the high respect paid to wealth in Great Britain, and Holland. It is small in the French head; a Frenchman is satisfied with a moderate competency, and when that is secured, he generally retires from business to pass his life in pleasure; while the Briton and the Dutchman toil on till the last, in the accumulation of property. In France, little respect is paid to a person merely on account of his wealth; while in some other countries, the mere whisper that a man is rich is sufficient to ensure him every homage and attention.

Is Acquisitiveness manifested by the lower animals?

Some of them exhibit its activity in great perfection. The magpie is a notorious thief, and carries its propensity

---

victed of stealing a diamond, the property of his father. The boy had been twice convicted, and kept solitary and whipped, but on his liberation he returned to his old habit of pilfering.

The little fellow, with tears, prayed the court to send him to the convict ship, to break him of thieving.

Court.—Why do you thieve?

Prisoner.—I cannot help it; I must do it.

The schoolmaster of Newgate was consulted as to the boy's intellect, and he was reported to be shrewd, of sound intellect, but so addicted to theft, that only last night he robbed a fellow-prisoner of a shilling. The court complied with the prisoner's request.

so far as to steal what can be of no use to it. Cats are generally looked upon as thieves, and so are dogs; but I apprehend that it is not, as in the magpie, from an abstract principle of appropriation that they steal, but merely to gratify hunger. The industrious bee, in hoarding honey for its winter stores, shows the force of Acquisitiveness. The same remark applies to the beaver, which accumulates wood for the formation of its dwelling. The cow and the horse have the sense of property. Each goes to its own stall, and defends it against intrusion.

9. Constructiveness.

Describe the position and function of this organ?

It is marked 9 in the bust, and lies in the temple below, and in front of, Acquisitiveness. The function may be described as a tendency to fashion or construct, and expertness in doing so.

In what class of individuals would you expect a large development?

In those who have a constructive or mechanical genius; such as Archimedes, Rennie, Telford, Watt, Vauban, Michaél Angelo, and Raphäel. Dexterous artizans, and painters and sculptors who are eminent in the mechanical department of their avocations, must have the organ large; and accordingly we find that in them it is invariably above average. It is impossible to be even an expert tailor or milliner without a good endowment of the organ.

Will Constructiveness alone enable us to contrive an ingenious piece of machinery?

No. Mechanical contrivers are not impelled by Constructiveness, but by intellect. The former, however, is absolutely necessary to embody or realize in a machine what the intellect suggests.

When Constructiveness is small, what is the consequence?

The person is what we call clumsy-handed, and can do nothing with neatness and dexterity. Some men are so very remarkable in this respect that they cannot even make a pen, or shave themselves.

In what manner does the faculty exhibit itself in the lower animals?

In various ways, and in some with exquisite nicety; witness the beautiful architecture of the honeycomb by that ingenious little artist, the bee;—the wonderful skill with which the beaver constructs its dwelling, and the art displayed by birds in the formation of their nests.

Is the force of this faculty in the lower animals in the ratio of the general intellect possessed by them?

No more than in man. The most sagacious animals, such as the dog and elephant, never attempt a work of art, while creatures far inferior in general sagacity excel in such achievements. This is a decided proof that a special organ exists for the purpose of constructing.

Do nations differ greatly with regard to the force of this organ?

Very much indeed. The head of the New Hollander is narrow in the region of Constructiveness, and his deficiency in this respect is notorious. The organ is largely developed in the Italian and French head, and more moderately in the English.

Can Constructiveness be abused?

Yes. The formation of engines for destroying human life, and the erection of such structures as the Sphinx, the Cretan Labyrinth, the Ear of Dionysius, and the Egyptian Pyramids, may all be regarded as abuses of the faculty. The same may be said of many of those trashy, evanescent works of fancy in which so much precious time is wasted by females in the middle and higher grades of society.[27]

27 There is a man in London who exhibits what he calls *the learned fleas*. He

Is it possible for a person who, while in health, has no talent for construction, to acquire such talent when the organ becomes excited by disease?

Facts prove that this is possible. In such cases, however, the adventitious talent thus curiously acquired, will endure only so long as the excitement continues.

In what respect does the constructive talent of man differ from that of the lower animals?

The talent of the lower animals is specific and limited. The bee can construct only a honeycomb, the bird a nest, the beaver a dwelling of a particular form. No tuition can alter the dispositions of these creatures so as to make them build after any other fashion; whereas, the constructive talent of man is general in its operation; he works by a thousand different ways, and forms an infinity of distinct objects.

GENUS II.—SENTIMENTS.

What meaning is attached to the word Sentiment?

It is applied to those affective faculties which, besides giving rise to inclinations, feel an emotion or affection which is not merely a propensity.

SPECIES I.—INFERIOR SENTIMENTS.

10. Self-Esteem.

How would you recognize the existence of a large Self-Esteem?

By the elevation which it gives to that part of the head

---

has contrived to employ those insects in a variety of occupations, such as drawing carriages and ships, carrying towers, and other pursuits equally momentous and important. Wonderful skill is displayed in the construction of the vehicles, &c. and in the admirable art with which the insects are attached to them—skill, which applied to proper purposes, might lead to great results, and do the artist honor. Such a childish application of great constructive talents, is surely an abuse of the organ in question.

immediately above Concentrativeness, and between that and the organ of Firmness.

What circumstance led to the discovery of this organ?

It was as follows—Dr Gall one day met with a beggar, who had such an inordinate opinion of his own consequence, that he refused to work, considering labor to be entirely beneath him. This man was the son of a rich merchant, and had been reduced to beggary by his overweening self-conceit preventing him from laboring for his bread. On examination, Dr Gall observed a large prominence on the upper and back part of his head, which he supposed might be the seat of pride. Subsequent observations have fully verified his conjecture.

To wha does excessive Self-Esteem lead?

To arrogance, to an immense opinion of one's self;[28] and, when accompanied by deficient Benevolence, to great selfishness.

What are the results of a small development?

Modesty and meekness of demeanor. The person thinks little of himself, however admirable his merits, and is perfectly free from presumption.

Is a great endowment of this faculty useful or the reverse?

Useful, rather than otherwise, if accompanied with good moral sentiments. It gives self-respect a spirit of independence, and that proper pride which disdains every thing that is dishonorable. Even bad men, who have much Self-Esteem, are often prevented from acting improperly through the fear of compromising their dignity.

---

28 It is the great Self-Esteem of the English which renders them so insufferable on the Continent—which leads them to decry all other nations, and to look upon themselves as in every respect the first people in the world. The songs which are addressed to the Self-Esteem of the nation, are universally popular; witness "Rule Britannia," and "Ye Mariners of England." That famous toast "The British Constitution—the pride of surrounding nations, and the envy of the universe," is a preposterous ebullition of immoderate Self-Esteem.

Is it possible to surmise the existence of Self-Esteem without examining the head, or being intimate with the individual?

Yes. Those so endowed have generally an upright gait, carry their heads high, and have altogether an air of consequence about them.

In which of the sexes does the organ most predominate?

In the male. Men generally assume more than women, and their opinion of themselves is much greater. More men go deranged than women from wounded pride.

What effect is produced by diseased excitement of this organ?

Its activity is enormously increased, and the person is apt to imagine himself a monarch, or even the Deity. In every madhouse lunatics of this description may be met with.

Mention a few of the forms in which Self-Esteem displays itself.

In a fondness for being placed in dignified situations, as on the magisterial bench, and an extreme sensibility to neglect or insult. "Better to reign in hell than serve in heaven," is the language of the faculty. Weak-minded people with much Self-Esteem, value themselves highly on account of their great connexions and acquaintances, if they happen to have any. Dr Gall speaks of conceited individuals, who will not cut their nails lest it should appear that they are obliged to work. People with a very strong endowment of this faculty, are fond of taking the lead on all occasions, and are apt to be disobedient to superiors. Leaders of mutinies have probably the organ of Self-Esteem largely developed.

Does Self-Esteem produce vanity?

No. The proud man despises the opinions of others; the vain man lives, as it were, upon them. "The man is

too proud to be vain," was a remark of Dean Swift's, and is founded on a correct view of human nature.[29]

What is the reason that many of our politicians who figure as great patriots and defenders of popular rights, are tyrants at heart, and bad masters to their dependants?

It seems to arise from those pseudo-patriots possessing a great endowment of Self-Esteem, with deficient Benevolence and Conscientiousness. The first will make them impatient of seeing others placed in higher stations than themselves, and the deficiency of the two last render them unscrupulous in their usage of others. To pull down those who sit in high places, they make tools of the populace, whom probably they dislike a great deal more than do those whose overthrow they are meditating. Knaves of this description frequently get into Parliament, and other public situations, by impudent pretensions to superior patriotism.

Are any of the inferior animals supposed to possess the faculty of Self-Esteem?

The turkey, the peacock, and the horse are conceived to do so. Napoleon's favorite steed seems to have had the feeling strong; when ridden by any other than his imperial master, he appeared depressed, and to feel as if degraded; but so soon as the Emperor mounted him, he

29 "The proud man is penetrated with a sense of his superior merit, and, from the height of his grandeur, treats with contempt or indifference all other mortals. The vain man attaches the utmost importance to the judgment of others, and ardently seeks for their approbation. The proud man expects that the world should come and discover his merit. The vain man strikes at every door to draw attention towards him, and supplicates even the smallest portion of honor. The proud man despises the marks of distinction which constitute the happiness of the vain one. The proud man is disgusted by indiscreet eulogiums. The vain man inhales incense with rapture, however unskilfully scattered upon him. The proud man, even under the most imperious necessity, never descends from his elevation. The vain man humbles himself even to the ground, provided by this means he attains his end."—*Gall, Sur Les Fonctions du Cerveau*, tome iv. p. 296. (This discriminative sketch is worthy of Theophrastus.)

raised his head erect, looking inflated with pride, as if conscious that he had the honor of carrying one who was greater than all others. The animal's sagacity was here equal to his pride, as he must have caught the idea of his master's rank, by remarking the respectful manner in which he was universally treated. The dislike which one dog has to see another caressed, arises from wounded Self-Esteem.

11. Love of Approbation.

Where is this organ situated?

On each side of the organ of Self-Esteem.

What are the objects sought for by the faculty?

It seeks after esteem and admiration, and is gratified by praise.

Mention the modes in which it displays itself when very strong.

In a constant and fidgetty desire to please and be admired by every body, in a morbid appetite for praise, and a longing to know what the world thinks of us. The person so endowed dresses well, or employs other means to excite admiration. His leading aim is to procure applause; he lives upon incense and is wretched if he does not obtain it. In short, as pride is the abuse of Self-Esteem, so is vanity that of Love of Approbation. Combined they produce ambition. This organ is very large in the busts of Themistocles[30] who from his earliest years dis-

30 Themistocles was not a strictly conscientious man, as is proved by his treatment of Aristides, and his proposal to destroy the ships of the other Greek powers for the purpose of giving his native country the supremacy, at a time when these powers were at peace with it, and had no reason to fear such an outrage. When, however, the King of Persia came to claim his promise that he would lead the Barbarian forces against Greece, his Love of Approbation seems to have taken alarm, and rather than do a deed which must have blasted his reputation forever among his countrymen, he chose, although the Athenians had used him most shamefully, and well deserved punishment, to die by his own hands. It is not pro-

played an unquenchable love of glory, and often declared that the victories of Miltiades would not allow him to sleep. The feeling seems to have been very strong in Alexander the Great, Napoleon, and Charles XII, of Sweden.

Have not women more vanity than men?

Such is generally the case, although some men have the passion in great excess. Women are easily flattered, and soon become partial to those who bestow upon them this species of adulation. Women frequently go deranged from diseased Love of Approbation, which is seldom the case with the other sex.

What is the demeanor of a person with a great endowment of this faculty?

It is conciliating, courteous, and polite, very different from the hard austerity and pomp of Self-Esteem. Beaux, masters of ceremonies, teachers of dancing &c., afford good illustrations of the natural language of the faculty.

Does the feeling display itself in any other way?

Yes. When combined with deficient Conscientiousness, it disposes the person to "shoot with the long bow," and to be addicted to boasting. If he is naturally a coward, his Love of Approbation will dispose him to talk largely of valiant feats performed by himself—all for the purpose of disguising his conscious pusillanimity.

Why are boasters generally cowards?

Men, for the most part, wish to make it appear that they possess those good qualities in which they are deficient; hence the coward, like the ass in the lion's skin, tries to assume the guise of valor.

By what class of men is Love of Approbation most displayed?

---

bable that Conscientiousness had much influence in stopping him, and far less fear. The feeling by which he was arrested in his career of vengeance was, in all probability, Love of Approbation.

By those whose success in their profession depends upon public applause, such as actors, painters, &c.; it is in the gratification of this feeling, indeed, that the chief reward of their exertions often consists. People who are fond of coming much before the public, either in the shape of orators, lecturers, chairmen of meetings, movers of addresses, or any other in which they will be spoken of, and their sayings and doings blazoned in the newspapers, have generally a large organ of Love of Approbation.

Does vanity manifest itself the same way with every one?

No. The way in which it manifests itself depends upon the other faculties. A vain man with a good endowment of Tune, and a small organ of Number, will be vain of his musical genius and comparatively indifferent to praise on account of his powers of calculation. Swindlers, pickpockets, robbers, and even murderers often boast of their feats. If a man is good at any thing, and possesses much Love of Approbation, he will be apt to boast of his eminence in that particular walk; hence we have men who are vain of their powers of eating and drinking. The vain man always wishes to be esteemed eminent in his profession, whether it be that of poet, statesman, physician, divine, pickpocket, glutton, drunkard, or bravo.[31]

Do the lower animals display the faculty under consideration?

Some do. Dogs are exceedingly fond of caresses and approbation. I remember of a favorite terrier bringing a rat which he had killed to my bed-room door, and scraping

31 "A large organ of Love of Approbation, in a head of great general size, gives origin to the ambition of a Bonaparte; while a large development of the organ in a small head produces frivolous vanity, like that of the Hindoos, whose heads, as Lady Irwin says, 'are toyshops filled with trifling wares.'"—*Phrenological Journal*, vol. viii. p. 641.

for admittance, evidently that I might see the good service he had done. The animal had been trained to rat-killing, and evidently knew that in slaying one of these creatures he had done an action which would be applauded. The violent efforts of the race-horse in the struggle for victory evidently proceed from Love of Approbation. The faculty is active in the monkey, which is fond of gaudy dresses.

What follows when the organ is very small?

A marked indifference to praise and to the opinions of the world. It is unfortunate when a person is so circumstanced, for the love of being well thought of is certainly one of the great incentives to the performance of generous deeds.

Does good ever result from excessive vanity?

Sometimes to the public—rarely to the individual. For instance, men, from a love of ostentation, often put down their names as donors to public charities, to which, otherwise, they would not have contributed a farthing. The magnificent sepulchral monuments of "Pere la Chaise" are erected, in a great measure, at the instigation of vanity on the part of the families of the deceased. The same feeling has much to do in the erection and endowment of hospitals to which wealthy individuals, such as Guy and Herriot, appropriate their fortunes.

Can a person be amiable without Love of Approbation?

Not easily. This feeling enters strongly into the composition of an amiable character. It gives the desire to please—the fear to offend—which, in every situation of life, are so desirable.

12. Cautiousness.

What is the tendency of this organ?

To produce a feeling of circumspection, and when very

active, fear. Those in whom it predominates are never rash ; they are what are called " prudent characters," who seldom get into scrapes, and scrupulously weigh the consequences of every word and action.

Does great Cautiousness necessarily lead to cowardice?

Not unless it greatly predominates over Combativeness. Some of the greatest heroes were distinguished for circumspection ; such was the case with Hannibal, Fabius, and many others. The skull of Bruce shows a large organ of Cautiousness, and this feeling was a marked one in his character.

Is a large organ of Cautiousness easily discriminated?

More so, perhaps, than any other. It gives a rounded and bulging fulness to the middle of the parietal bones, under which it is situated.

Is this organ well established?

It is one of the best authenticated of the whole series. Those in whom it is large, have uniformly the feeling of circumspection strongly stamped upon their character.

What is the consequence of a small development?

Rashness. The person speaks and acts without thinking ; and, if engaged in business, it is ten to one that he ruins himself.

Is Cautiousness ever suddenly excited?

Often ; and the result is a panic.

What most powerfully excites the organ?

Sudden and imminent danger. Soldiers in battle are sometimes panic-struck, and take to flight from the violent excitement of Cautiousness. Before a battle, it is more likely to be active than when the other faculties are fairly called into play by the heat of the contest.

What good purpose is served by this faculty?

It keeps people out of mischief, and renders them prudent. A community in which the feeling did not exist, would soon go to destruction.

Is the organ ever diseased?

It sometimes is; and the person becomes straightway the victim of the most miserable apprehensions. I have remarked that this organ is uniformly large in those afflicted with hypochondria; which, indeed, is a morbid affection of the organ.

Is the organ larger in the female than in the male?

It is so, not only in the human species, but also in the inferior animals.

Is the feeling very strong in any of the lower animals?

In some, exceedingly so; the sheep and mouse, for example, are remarkably timid. Animals which prowl by night, such as the owl and the cat, show the manifestations of active Cautiousness. Some of the monkey tribe, when they go on a plundering expedition, place sentries to warn them of danger. The chamois, the wild goose, the crane, the starling, and the buzzard are remarkable for circumspection, and act like the monkies in appointing sentinels.

Does the size of the organ vary much in different nations?

It varies considerably. In the French head it is rather small, which partly accounts for the recklessness of the national character, and the state of disturbance in which that singular people keep not only themselves, but all Europe In the English, Scotch, and German head, the organ is large, and smaller in the Irish. Scotch prudence and Irish thoughtlessness have long been proverbial.

SPECIES II.—SUPERIOR SENTIMENTS.

13. Benevolence.

Where does this organ lie?

Immediately before the fontanel[32] (or opening of the

32 The fontanel is at the meeting of the coronal and sagittal sutures. In the young child it is cartilaginous. From the time of birth it begins to contract, and is generally completely ossified and closed between the second and third years.

head, as it is vulgarly called), in the upper and middle part of the frontal bone; and it extends downward to the top of the forehead. It is known by the elevation which, when large, it gives to the middle of the anterior region of the top of the head.

Was a high forehead, before the time of Gall, supposed to indicate benevolence of disposition?

There is reason to believe so. Shakspeare speaks of "foreheads villainous low;" and the ancients, in designing their deities generally invested them with broad and lofty foreheads, thus indicating commanding intellect, and distinguished benevolence. The subject, however, was not philosophically thought of till Gall took it up, and demonstrated that the sentiment depends upon a special organ of the brain.

What effect on the character is produced by a large organ?

The individual is distinguished by the kindness and mercy of his disposition. He is generous in his sentiments, averse to give pain and uneasiness, charitable, and inclined to think well of every body, and do good to all his fellow-creatures. Some of the ancient philosophers, such as Plato and Socrates, are splendid instances of the beauty and power of this noble sentiment; and a still more illustrious and perfect specimen is exhibited in the person of Christ, as recorded in the New Testament—a work in which the supremacy of Benevolence, Conscientiousness, and Veneration, shine with a lustre that will hand it down to every age, as the most sublime code that ever existed of morality and religion.

What happens when the organ is very small?

The person is careless of the welfare of others, disobliging and selfish. Unless he has some end to serve, it will be impossible for him to do a kindly action. Such a man can never be a true and disinterested friend. Moloch, as

represented in "Paradise Lost," is an instance of a total destitution of this faculty; and nearly the same may be said of Shakspeare's Iago, Moore's Zeluca, and also of Varney in the romance of "Kennilworth." Some of the Roman emperors, as Domitian, Commodus, Caligula, Nero, and Heliogabolus, seem to have been as nearly void of the sentiment as we can suppose creatures, not absolutely denizens of pandemonium, to be.

May Benevolence co-exist with great roughness of manner?

Nothing is more common; but the general tendency of the feeling is to communicate sweetness to the disposition, and to soften the manners. Some people are absolutely ashamed of the Benevolence they possess, and try to hide it under a rough exterior; "rough diamonds" of this description are occasionally to be met with. Dr Johnson was an instance of distinguished Benevolence combined with coarseness of manners—the *fortiter in modo* with the *suaviter in re.*

What are the abuses of Benevolence?

The incapability of resisting solicitation is one; whence the individual becomes the prey of mendicants and impostors; he impoverishes himself to do good to others, and has his brain constantly filled with Utopian schemes of philanthropy.[33]

Have the lower animals this organ?

They have. In them it shows itself chiefly by tractability and gentleness. A good tempered dog or horse can be known by the shape of the head. The celebrated racehorse, "Flying Childers," had a very low and flat fore-

33 I know several individuals in this situation, and in the whole of them there is great height of forehead—in other words, a large development of the organ of Benevolence. The fanciful impracticabilities of Mr Owen seem to result from the immoderate action of this organ, combined with that of Hope, in excess.

head, and his temper was extremely vicious. In the spaniel and Newfoundland dog, which are distinguished for goodness of temper, the organ is much larger than in the bull-dog, whose dispositions are naturally morose and savage. The roebuck, which is a mild-tempered animal, has a prominence, and the chamois, which is the reverse, a depression over the region of Benevolence.

14. Veneration.

Where is the organ of Veneration situated?

Immediately behind that of Benevolence, and directly over the fontanel. It occupies the middle of the top of the head.

What is the nature of its faculty?

Veneration in general, or respect for what we conceive o be worthy of esteem or regard. When directed to the Supreme Being, it gives the tendency to religious adoration.

This organ was large in the head of Voltaire; why then was he an infidel?

Because he was not convinced of the divine origin of Christianity. No man can venerate what he conceives to be false. Voltaire, however, venerated the Deity, in whose existence his intellect did not permit him to doubt.

May a person believe in a particular religion, and yet have little Veneration?

Undoubtedly. Belief may be a matter of pure reason, though, in general, the judgment is swayed by the feelings. The merely intellectual believer, however, will never be a very ardent disciple of that religion in which his faith is placed. He may believe in a Great First Cause, without inclining to adore.

Under what other forms does the faculty display itself?

In a respect for rank, for existing institutions, for antiq-

uity and for the ruling powers. It is the grand natural maintainer of subordination of the lower ranks to the higher, and of the submission of children to parents and teachers. A person with this sentiment strong, is overawed in coming into the presence of those whose rank, or other valued distinction, is greatly superior to his own.[34]

Some people are fond of collecting antiques; what does this tendency arise from?

From Veneration combined with Acquisitiveness. The first disposes us to value the object on account of its antiquity; the second makes us long to possess it. People with small Veneration have little abstract love for any thing merely because it is ancient.

Does Veneration display itself in the same way with every one?

No. It is directed very much by the other faculties. A man of high intellect and Veneration will venerate intellectual characters; another with Veneration and Combativeness, great warriors; and a third, with Veneration and Acquisitiveness, will venerate the rich. The two former, on beholding the cross, the hunting horn, or the bones of Charlemagne, in the church at Aix-la-Chapelle, will feel deep awe at the sight of these relics of so renowned a statesman and hero; the latter, having no sympathy with valor

---

34 "The faculty may be manifested in reverence for Jupiter, or the Lama of Thibet, or graven images, or the God of the universe; for crocodiles or cats, or the Great Mogul, or Catholic priests, or Presbyterian ministers, or rusty coins, or a titled aristocracy, or the ornaments and furniture of a church. To those who have it disproportionately strong, the word 'old' is synonymous with 'venerable;' and in their view, no institution or doctrine, however hurtful and absurd, is, if sanctioned by antiquity, to be at all meddled with. They obstinately adhere to the religious tenets instilled into them in childhood, and will not listen to arguments tending to support doctrines of a different kind. When, on the other hand, the organ of Veneration is moderate, and the intellect is acute and enlightened, the individual, unwarped by prejudice and feeling, regards only the intrinsic merits of the doctrines and institutions which prevail around him, and shapes his opinions accordingly."—*Phrenological Journal*, vol. viii. p. 598.

and genius, will gaze upon them unmoved, while he would look with sensations of great respect, and even awe, upon Mr Rothschild.

When the organ is strongly excited, in what manner does it affect the character?

In producing keen religious or devotional feelings, terminating, sometimes, even in madness.

People sometimes become religious all at once who never showed any thing of the kind before.[35] *From what does this arise?*

From sudden excitement of the organs of Veneration and Wonder. The individual has, probably, been placed in circumstances to call them into activity, as from hearing some enthusiastic preacher; and the result is a vehement fit of religion, which continues so long as the stimulus operates on the brain.

According to this view, a person may become religious whether his organ of Veneration be large or small, seeing that a small organ may be stimulated as well as a large one?

It is only the predominating organs that are very likely to be excited; a small organ is by no means equally liable to be acted upon in this manner, and when excited, does not give rise to the same intensity of feeling. If it were so acted upon, the person would be religious as compared to what he formerly was, but still his feelings on this point would be far inferior in energy to those of another person, with a larger organ of Veneration in the same state of excitement.

---

35 It also oftentimes happens, that in cases of serious illness, people become very religious, who, for many years previous, showed nothing of the kind. This, I believe, may often be accounted for, on the well known principle of cerebral excitement reviving lost ideas and impressions. The brain is stimulated by the disease, and the religious feelings instilled into us in childhood are brought back to cheer the sufferer on the bed of sickness, and smooth his path to the grave. Various instances of the resuscitative power of excited brain are given in this work.

May a person have a great deal of religious feeling and yet not be virtuous?

Undoubtedly; witness the instances of Louis XI, and Catherine of Medicis, both religious devotees, and yet most worthless characters. If the precepts, however, which a religion inculcates, are, in themselves, of a strictly moral character, the respect for their authority inspired by this sentiment, will naturally tend to make people more virtuous. The precepts of Christianity are of this kind, and when strictly followed, can only lead to sound morality; those of some other forms of religion being depraved, conduce to vice. The Hindoo who throws his child beneath the wheels of the car of Juggernaut, acts as much under the influence of Veneration, as the enlightened Christian who worships the true God. The difference consists in this, that, in the one case it is a misdirected impulse, in the other, it is guided by reason.

In what sex is the feeling of Veneration most energetic?

In the female. Women are more susceptible of religious impressions than men, and are always the first to be caught by new doctrines. They have also a greater tendency to respect rank, and are naturally aristocratic in their ideas. Few women are enamored of republican principles.[36]

What were the circumstances which lighted up the fires of Smithfield, and prompted the massacre of St Bartholomew?

---

36 Some years ago, religious monomania was exceedingly common in the West of Scotland, among a class of people who went by the name of Rowites. These fanatics were mostly young females, in the middle and upper classes of society; and the extent to which they carried their insane ravings was most astounding. An enthusiastic young woman was the High Priestess of this sect; her they supposed to be divinely commissioned, and even gifted with the power of working miracles. At length she left the place, and the excitement of her presence being withdrawn, the mania subsided. I agree with Dr M'Intosh in thinking, that a few weeks' work on the tread-mill, with scanty fare, would have cured of their fantasies the over-fed and idle young ladies who indulged in this egregious folly.

These horrible immolations of innocent persons at the shrine of bigotry, seem to have resulted from a diseased excitement of this organ, combined with great Destructiveness, and a lamentable lack of Benevolence and knowledge. A weak or uninformed intellect, acting under the inspiration of morbid religious feeling, would make the perpetrators imagine they were doing a deed highly acceptable to the Deity; and Destructiveness coming into play, and not being counteracted by Benevolence, would urge them on fiercely to the commission of these diabolical atrocities.

15. Firmness.

Where is this organ situated?

Behind that of Veneration, on the summit of the head, to which, when very large, it gives a towering appearance.

What is the nature of its faculty?

The name sufficiently designates this. When it is very large, the individual is distinguished for great perseverance. Whatever he undertakes, whether for good or evil, he pursues steadily; and the general cast of his mind is firm and decided. He encounters misfortunes heroically, and endures physical pain with unshrinking stoicism. He is not to be turned from his purposes, but is rather apt to be unyielding and obstinate. There are great differences in people as to their capability of resisting solicitation. This, other things being equal, arises from the different degrees in which they are endowed with Firmness.

What results from a small development?

Fickleness and infirmity of purpose. Unstable, undecided people are all deficient in this respect, particularly if Cautiousness be large.

What is Obstinacy?

Obstinacy is an abuse of Firmness, and the result of a

great development of this organ with small or moderate Conscientiousness. A strictly honest man can never be long or wilfully obstinate, however great his Firmness; the latter always gives way before what he conceives to be the dictates of justice.

Is it possible to have too much firmness?

When the dispositions are naturally virtuous, and the intellect good, this is impossible, as the faculty in question only leads them more strongly and perseveringly in their natural current. When, however, there is a predominance of vice, great Firmness may act perniciously by causing an obstinate perseverance in evil.

In what character would you expect to find the organ large?

In those who show unshaken constancy and indomitable perseverance. It must have been large in Luther and Knox. Robert Bruce's skull shows a very great development of it; and he evinced the feeling to a wonderful degree. It is large in those who manifest great determination in crime, as Haggart; and also in those whose steadiness in friendship nothing can shake. The firmness of Captains Ross and Parry is well known; and the organ is very ample in the heads of those eminent navigators. The North American Indians are remarkable for their unconquerable fortitude, and the dogged indifference with which they submit to the most horrible tortures; in them it is greatly developed. It must have been very large in Marshal Ney, who possessed astonishing firmness of character.[37]

---

37 I took a cast of the head of George Gampbell, executed at Glasgow, for murder, and found the organ very largely developed in his head. This man, both on the scaffold, and in the whole of his career, displayed indomitable firmness of character. In all obdurate criminals, the organ in question is large.

16. Conscientiousness.

Where is this organ situated?

At each side of Firmness.

In what manner does it influence the conduct?

By inducing sentiments of strict justice. He in whom it is strongly developed is a person of stern integrity; he pays his debts, does what he considers his duty, and is incapable of dissimulation or falsehood—adhering in its strictest sense, to the noble maxim of doing unto others as he would be done by. Such a man will rather die of starvation than steal—rather go to the block than violate the dictates of his conscience. He has a sincere and peculiar pleasure in acting honestly.

What are the consequences of a deficient Conscientiousness?

Lying, theft, hypocrisy, evil-speaking, dissimulation and general want of principle, are apt to be the consequences of such an unfortunate configuration, the propensities being left in a great measure unbridled.

May a deficiency of the sentiment display itself in other ways than in the commission of what society would deem crimes?

Yes. The not keeping appointments, the telling of "white lies," jilting, coquetry, professional quackery and humbug, writing impertinent and anonymous letters, puffing trashy books, giving false characters to servants, taking possession of another man's seat in the theatre or coach, knowing that you have no right to do so, and that it will put him to inconvenience, are all breaches of honesty, and indicate a small or moderate development of the organ. Divulging secrets with which we are entrusted, is another violation of the sentiment, frequently committed by people who would be very much astonished at being told they were not perfectly honest.

Is a deficiency of Conscientiousness ever consistent with the enjoyment of a fair reputation?

Nothing is more common. Many men who are not by nature honest, act honestly in matters of business, because it is their interest to do so; but such persons will be found constantly violating the minor branches of honesty, such as those mentioned, when no particular evil arises to themselves from such violation. Men previously considered honest, sometimes become bankrupt under disgraceful circumstances, involving their friends in one common ruin, and recklessly sacrificing, for the purpose of saving themselves, every human being on whom they can lay hold. This is the result of small Conscientiousness. So long as things go well, the man acts with integrity; but when he finds that upright conduct will only hasten the crisis of his fate, his small modicum of Conscientiousness goes to sleep, and he has recourse to every dishonest expedient to put off the evil day.

What is remorse?

That distressful state of mind arising from outraged Conscientiousness or Benevolence, consequent on our own actions. If a man in an unguarded moment, does any thing of which either of these faculties strongly disapproves, the pain arising from such disapproval constitutes remorse.

Do all persons who commit crimes feel the pangs of remorse?

They do not. Where Conscientiousness is very deficient, especially if Benevolence is in the same condition, they experience little or nothing of the kind. It is a great mistake to suppose that all the wicked are tortured by the pangs of conscience. Bellingham felt no remorse for the murder of Mr Percival; nor did Hare for his still more di-

abolical deeds.[38] When such wretches escape the gallows, they are more frequently punished by the abhorrence of society than by any internal feeling arising from conscience. The mark of Cain is set upon them, and they walk the earth, outcasts from the human race.

In what class of persons is an ample endowment of Conscientiousness especially requisite?

No human being exists in whom a deficiency of this most god-like of all the faculties is not to be deplored. It is in a peculiar manner necessary, however, to judges on the bench, ministers of state, confidential servants, and all entrusted with onerous and important duties. Justice, in fact, is merely the manifestation of Conscientiousness.

Can this faculty be abused?

Yes, especially by weak-minded people. An honest man, for instance, if his understanding be so weak that he does not see the unjust tendency of an action, may persist in doing it, in the belief that he is really performing his

38 William Burke, whose Benevolence was not so small as that of Bellingham and Hare, though sadly overpowered by the predominance of his lower propensities, experienced the horrors of remorse to a great degree. He stated that for a long time after the commission of his first murder, he felt it utterly impossible to banish for a single hour the recollection of the fatal struggle he had with his victim—the screams of distress and despair—the agonizing groans, and all the realities of the dreadful deed. At night the bloody tragedy, accompanied by frightful visions of supernatural beings tormented him in his sleep. For a long time he shuddered on being alone in the dark, and during the night kept a candle constantly burning in his room. Even to the last, he could not overcome the repugnance of his moral nature to murder--such a glimmer of Benevolence as he had, was always in his way admonishing him; and this he had to extinguish in the fumes of whiskey before he was able to overcome its influence. He positively asserted that he could not have committed murder when perfectly sober.

The following is an instance of the absence of remorse. Many years ago, a wretch was broken upon the wheel at Lyons, for some atrocious murders which he had committed. After having his limbs broken to pieces, the monster, just as he was expiring, laughed aloud, and upon being asked by the executioner the cause of his merriment, said, he could not help feeling amused at the recollection of the grimaces made by a certain spoon-maker, into whose mouth he had poured melted tin.

duty. Another abuse of the faculty is an absurd adherence to pernicious principles which the person believes to be right. Excessive remorse and self-condemnation, where there are no circumstances to justify such feelings to half the extent in which they are experienced, are also abuses of Conscientiousness.

Do you affirm that all actions prompted by Conscientiousness are not necessarily just?

I do. This sentiment being a blind feeling, merely wishes to act justly without knowing what is just. A man, for instance, may think that his action will realize the dictates of justice; whereas, had his intellect or knowledge been greater, he would have seen that the reverse might be the case.

Is great delight experienced in the exercise of this faculty?

Greater than perhaps from any other. "Honesty is its own reward." By acting in obedience to Conscientiousness, a man may involve himself in poverty, or meet with imprisonment and torture; still the consolation derived from his own integrity of purpose supports him; he is recompensed by the approval of his conscience, and rejoices even in the midst of suffering.[39]

17. Hope.

Describe the position and functions of the organ of Hope.

---

39 A beautiful instance of the power of Conscientiousness was witnessed by Dr Smollett. Walking along the streets of Glasgow, a beggar, in great apparent misery, solicited charity of the Dr, who, putting his hand into his pocket, gave him what he supposed to be a shilling, but which was, in reality, a guinea. The beggar supposing that a mistake was committed, ran after his benefactor and tendered him the golden gift. "Good God!" exclaimed Smollett, on witnessing this act of integrity, "in what a habitation has honesty taken up her abode!" It need hardly be added that the generous novelist made this upright mendicant keep what he had received, as a reward for his admirable conduct.

It lies on each side of Veneration, and its tendency is to produce the feeling of Hope. If the other faculties desire any thing, it disposes us to believe in the possibility of their longings being speedily gratified. A person, for instance, who is acquisitive, will have a strong hope or expectation of being able to obtain money, should the faculty under consideration be powerful.

Does not this depend upon reflection?

No: for when reason tells us that the chances are all the other way, we often continue hoping, and console ourselves with the idea of ultimate success.

What good purpose does this faculty serve?

It induces us to take gay and pleasant views of the future, and keeps up our spirits in the midst of misfortune: though clouds lower around us, we are cheered with the expectation of speedy sunshine. Mungo Park, in his desolate sojournings in Africa, and Captain Ross, in his miserable polar solitude of four years, must have been powerfully supported by the influence of this organ. One of Ross' men died of sheer despondency, which would not have happened had he possessed the sentiment in vigor. The strong hope of a reprieve has sustained the spirits of malefactors till within an hour of their being brought upon the scaffold. Mary MacInnes while under sentence of death for murder, never lost the hope of being pardoned.[40]

What is the result of a small organ of Hope?

The person is prone to despondency. He never takes cheering views of the future, and is surprised when any

40 In the head of Campbell, already alluded to, the organ of Hope is well developed, and he had the most perfect confidence of being acquitted, although the evidence against him was irresistibly clear. This conviction of escape, in the face of such evidence, would have been less strong, had he possessed greater powers of reflection, but these being weak and incapable of appreciating the effect which the evidence would have upon the minds of the jury, and the feeling of Hope at the same time active, his astonishment at being convicted, and his expectation o acquittal are accounted for. (See Appendix.)

thing lucky occurs. People of this turn of mind are seldom disappointed, which is the only good that ever results from deficient Hope. In suicides, and those who view a future state with apprehension, we should expect the organ to be small in proportion to that of Cautiousness.

What are the abuses of Hope?

Rashness, credulity, and high expectations, not founded on reason. Those who "build castles in the air," gamblers, dabblers in lotteries, and in the funds, are all much imbued with the sentiment of Hope.

What effect has Hope upon a person's religion?

It disposes to faith in reality of agreeable prospects held out, and to strong belief of a happy state of being, in a life to come.

18. Wonder.

Where is the organ of Wonder situated?

Immediately above Ideality.

What is its function?

To inspire a love of the strange, the new, and the marvellous. It gives a fondness for supernatual stories, and a love of visiting mysterious and unfrequented countries; and also disposes to the belief in witches, apparitions, and superstition in general.

Is wonder the only source of superstition?

No. Ill-directed and excessive Veneration sometimes leads to the same result, especially when coupled with ignorance and weakness of intellect.

Mention a few individuals in whom you would expect to find the organ of Wonder largely developed?

Mrs Radcliff, Mr Coleridge, and the Ettrick Shepherd. The Mysteries of Udolpho, Christabel, and Kilmeny, are all strongly characterized by the sentiment of Wonder.

Have persons who see apparitions, generally the organ large?

This fact seems to be well established. In the portraits of Tasso, who was visited by a familiar spirit, the organ appears large; it is very large in the head of Earl Grey, who is haunted by the apparition of a bloody head; and a crowd of cases have been collected by Dr Gall and others, which seem to place the matter beyond a doubt. When Gall first saw Earl Grey, he said to a friend who stood by, "That man beholds visions." These facts are curious, and apparently incredible, but nevertheless they are supported by powerful evidence.

What are the abuses of this faculty?

When too strong, it leads to fanaticism, superstition, and credulity with respect to the mysterious. The more marvellous a story, the readier is it believed by him who is amply endowed with Wonder.

Is the organ peculiarly liable to excitement?

More so than most others. A fanatical preacher, by calling into activity the organ of Wonder, will infect with his zeal a whole parish. Such was the case with Irving, Campbell, and other well-meaning but deluded enthusiasts —to say nothing of the notorious Joanna Southcote. During the persecutions in Scotland, excitement of this organ seems to have been exceedingly common among the Covenanters.

19. Ideality.

Where does this organ lie?

On the side of the head, above the temples. Above, it is bounded by Hope and Wonder, behind by Cautiousness, and below by Acquisitiveness.

What is the nature of the faculty connected with it?

It consists in a taste for the graceful, the beautiful, and the sublime.

What objects gratify this faculty?

All things which partake of the above qualities. The savage desolation of Glenco, the awful gloom and sublimity of Chamouni, the graceful loveliness of Windermere, a beautiful woman, a lovely child, the Belvidere Apollo—all those objects stimulate the organ, and give rise to emotions of the grand or the beautiful. Painting, sculpture, and poetry; the loveliness of the moonlight hour, and the gorgeous majesty of sunset, are all dear to him who is gifted with Ideality.

In some persons, Ideality is most highly gratified by beautiful, in others, by sublime objects. Whence does this difference arise?

Destructiveness and Cautiousness, in combination with Ideality, are conjectured to give a love of the sublime in particular. Where a love of the beautiful predominates over that of the grand and the terrible, the two former are probably of more moderate dimensions. Destructiveness, which seems to take an interest in desolation, may give Ideality a bias towards the dreary sublime, while Cautiousness appears to be an ingredient in love of the terrible. The subject, however, stands in need of farther elucidation.[41]

Will Ideality alone make a painter or a poet?

No; but it gives the feeling for both painting and poetry. To excel in these arts other faculties are requisite; the painter requiring Form, Size, Coloring, and Constructiveness, and the poet, Language, to embody his conceptions.

Mention a few individuals eminently gifted with Ideality?

Shakspeare, Milton, Spencer, Ariosto, Coleridge, and Shelley among poets; Raphäel, Michäel Angelo, and

41 "The Isle of Palms" by Wilson, is a specimen of the purely beautiful in poetry, while Coleridge's "Hymn in the Vale of Chamouni," contains much of the dreary, and Byron's "Manfred" of the terrible sublime.

Salvator Rosa among painters; Thorwaldsen and Flaxman among sculptors. The works of these great men display the faculty in all its vigor.

What is the character of a person who has a great endowment of Ideality?

His language is generally elevated, his conceptions flow from him rapidly and eloquently, his conversation displays much richness, his illustrations are copious and varied, and he abounds in figurative language. This is peculiarly the case where the organs of Language and Comparison are also large. Ideality also gives refinement of manners.

When the organ is small, is the character materially different?

Yes. The manners are homely. The person seldom or never uses poetical language. Grand or beautiful objects do not strike him forcibly, or throw him into raptures. He is a plain, matter-of-fact man, who boasts largely of his common sense, and affects a great contempt for poetry, and other imaginative productions. The organ is small in the heads of Locke, Joseph Hume, and Cobbett.[42]

42 Cobbett's remarks on Milton are ludicrously characteristic of his deficient Ideality. "It has," says he, "become of late years the fashion to extol the virtues of potatoes, as it has been to admire the writings of Milton and Shakspeare. God almighty and all fore-seeing, first permitting his chief angel to be disposed to rebel against him; his permitting him to enlist whole squadrons of angels under his banners; his permitting the devils to bring cannon into this battle in the clouds; his permitting one devil or angel, I forget which, to be split down the middle, from crown to crotch, as we split a pig; his permitting the two halves, intestines and all, to go slap up together again; and become a perfect body; his then permitting all the devil host to be tumbled headlong into a place called hell, of the local situation of which, no man can have an idea; his causing gates (iron gates, too,) to be erected to keep the devil in; his permitting him to get out, nevertheless, and to come and destroy the peace and happiness of his new creation; his permitting his son to take a pair of compasses out of a drawer, to trace the form of the earth; all this, and, indeed, the whole of Milton's poem, is such barbarous trash, so outrageously offensive to reason and to common sense, that one is naturally led to wonder, how it can have been tolerated by a people, amongst whom astronomy, navigation and chemistry are understood. But it is the fashion to turn up the eyes when 'Paradise Lost' is mentioned; and if you fail herein you want taste; you want judgment even, if you do not admire this absurd and ridiculous stuff, when, if one of your relations were to write a letter in the same strain, you would send him to a mad-house, and take his estate."

Is the faculty sharpened or blunted by old age?

Age impairs Ideality more than it does any other faculty. Old people seldom display any of it, although there are very eminent exceptions, such as Homer, Milton, Goethe, and Titian.

What are the abuses of Ideality?

Extravagance of idea, absurd enthusiasm, flightiness, and a tendency to see every thing through a false medium. It requires strong reflecting powers, and much self-command, to restrain the ebulitions of excessive Ideality.

Is it a valuable faculty, and one whose possession is to be envied?

Judging from the present condition of society, I would say, that this is a doubtful point. Ideality certainly beautifies the mind, and gives rise to the most exquisite emotions; but, unfortunately, dealing, as it does, with much that is imaginary, its possessor is apt to become disgusted with the grosser realities he must daily encounter. The refined sensibility which the faculty, when very active, bestows, is perhaps rather a curse; and the occasional happiness resulting from it, more than counterbalanced by the frequent outrages which it meets with.

20. Wit.

Describe the situation of the organ of Wit.

It lies in the anterior, superior, and lateral parts of the forehead.

What is the nature of the faculty?

It may be described as that feeling which gives a tendency to view things in a ludicrous light, and inspires the sense of the ridiculous.

In whom would you expect to find the organ large?

In gay, mirthful, and facetious people; in those who possess the power of brilliant and humorous repartee, such

as the celebrated Duchess of Gordon, Lady Wallace, Lord Norbury, Harry Erskine, and Mr Curran; in such writers as Jean Paul, Sterne, Swift, Smollet, Voltaire, Piron, Rabelais, and Cervantes; and in such actors as Garrick, Matthews, Liston, and Munden. Caricaturists, such as Hogarth, Bunbury, Rowlandson, and Cruikshank, must also be well endowed with the organ.

Does Wit lead to satire?

It does, if combined with Destructiveness.

Is humor synomymous with Wit?

It is not, although the best species of humor is that which is well seasoned with Wit. Humor depends greatly upon the manner; Wit, not at all. A witty remark is witty all the world over, by whomsoever made, while what is humorous from one man, may be quite the reverse from another. "The School for Scandal" is a comedy remarkable for wit: "She Stoops to Conquer" is as remarkable for humor.

What results when the organ is small?

The person has a natural dislike to drollery. Those who deal in it he considers buffoons, and wit altogether as a piece of impertinence. He hates absurdity, and every thing which does not square with the most rigid common sense.

What are the abuses of the faculty?

An incessant tendency to laugh at every thing; an immoderate buoyancy and ebulition of spirits, and an inclination to say witty things on all occasions. Rabelais joked on his death-bed, and Sir Thomas More on the scaffold; proofs of the ruling passion being strong even in death. Wit is a most dangerous talent to be possessed by a badly disposed person.

Are phrenologists agreed concerning the elementary function of this organ?

No: some are of the opinion, that it merely gives the ability to perceive differences, and that this perception is, in certain circumstances, attended with the emotion of the ludicrous. The faculty stands greatly in need of farther elucidation.

21. Imitation.

Where is the organ situated?

Directly above Wit, and on each side of Benevolence.

What is its function?

To produce imitation in general; mimicry is one of its most active results.

Is the faculty peculiar to the human subject?

No. Some of the inferior animals are well endowed with it. The parrot, the starling, the mocking bird, have the faculty in great perfection, as well as the organ through which it is manifested.

Is Imitation necessary for the profession of an actor?

Eminently so. The process by which the performer merges his own character in that represented, is effected by means of Imitation and Secretiveness. All distinguished actors are good mimics, even in the vulgar sense of the word. Such was the case with Garrick, Foote, Kean, and a multitude of others. Matthews, who was one of the best ever known, had a large organ of Imitation.

Is it requisite for any other profession?

It is very necessary for painters—painting, especially portraiture, being, essentially, an imitative art. Dramatic writers require a large endowment of the organ. In the likenesses of Shakspeare—whether authentic or not—it appears greatly developed; and so, also, it was in the head of Sir Walter Scott, whose writings are highly dramatic.

Will Imitation alone produce acting or painting?

No more than Ideality alone will produce poetry; other faculties are needed. The actor requires Secretiveness

and Ideality; the painter, as already mentioned, Form, Size, Coloring and Constructiveness. Imitation, however, is a powerful element towards excellence in both departments.

Must a person with large Imitation be necessarily a good mimic?

No. This imitative talent may display itself in some higher walk than in mere mimicry, as in those above mentioned. It is probable, that a large organ of Tune adds much to the power of imitating voices and other sounds.

Are not good painters frequently good mimics?

They are, and it proceeds from their large Imitation.

ORDER II.—INTELLECTUAL FACULTIES.

What faculties are called Intellectual?

Those which make man and the lower animals acquainted with the existence, qualities, and relations of objects. They are divided, though not quite accurately, into three Genera,—1st, The External Senses; 2d, The Internal Senses or Perceptive Faculties; and 3d, The Reflective Faculties.

GENUS I.—THE EXTERNAL SENSES.

What are the External Senses?

Those faculties which, by means of organs in direct relation with the external world, are the inlets of impressions or sensations from without.

How many senses are there?

Hitherto their number has been limited to five, viz. Feeling or Touch, Taste, Smell, Hearing, and Sight; but good reason has recently been shown for regarding certain nerves distributed to the muscles, and discovered by Sir Charles Bell, as having reference to a sixth sense—that of mechanical resistance.[43]

---

43 Each sense has its appropriate nerve by which the impressions made upon the external organs are transmitted to the brain. The eye has the optic nerve, the ear the auditory nerve, the tongue the nerve of taste, and the skin the nerves of feeling or sensation. To enable the muscles to execute the mandates of the will, they are connected with the brain by the nerves of motion, which are every where distributed over them. Till very recently, these nerves of motion were supposed to be simple; but Sir Charles Bell has demonstrated, that, in reality, each is composed of two nerves, bound up in the same sheath, but serving different purposes. One called the Motor Nerve, transmits to the muscle the nervous stimulus necessary to produce the desired contraction, and consequently motion; while the other, that of the Sense of Mechanical Resistance, gives the brain information as to the state of the muscle whose contraction is desired; thus enabling the brain to send to the muscle the exact amount of nervous stimulus necessary for accomplishing the intended effort. By "the state of the muscles,' is meant the existing degree of their contraction—in other words, the force which they

Is it the brain which takes cognizance of impressions, or these external organs of the senses?

The brain undoubtedly. The external organs themselves have no function but to convey the impressions to the sensorium.

How is this reconcileable with the fact, that when the nerve of sight is impaired, vision is destroyed, and that when the nerves of feeling are paralyzed the sense of touch suffers?

The cause is obvious, for if the communicating medium which carries the impression to the brain is destroyed, it is not to be supposed that the brain can receive the impression.

Does the brain ever receive, by other means, impressions similar to those which are brought to it by the senses?

It occasionally does, but the impressions are false, and have no relation to any thing occurring without. Thus in consequence of some internal stimulus arising in the brain, the blind have sometimes a distinct impression of seeing, and the deaf of hearing. The brain, in such cases, is stimulated in the same way as by the eyes and ears bringing impressions to it, but those external senses being incapable of carrying such impressions, perceptions are necessarily fallacious. It sometimes happens, in like manner, that people neither blind nor deaf see apparitions and hear sounds that have no existence without. This occurs in consequence of the brain or nerves being affected by disease, in the same way as they are affected in health by external impressions.

---

are exerting against a resisting body. See a very able and elaborate Essay by Mr Simpson, in the 43d Number of the Phrenological Journal, where the function of the Motor Nerve, and Nerve of Resistance, are clearly and satisfactorily distinguished and illustrated.

GENUS II.—THE PERCEPTIVE OR KNOWING FACULTIES.

SPECIES I.—FACULTIES WHICH TAKE COGNIZANCE OF THE EXISTENCE OF EXTERNAL OBJECTS AND THEIR PHYSICAL QUALITIES.

22. Individuality.

Describe the seat and function of this organ.

It lies in the centre and lower part of the forehead, immediately above the root of the nose. The faculty dependant upon it gives an aptitude for perceiving objects without any reference to their nature or the purposes served by them. For instance, two persons, one with a large, the other with a small development enter a room together; the first notices every thing presented to his senses—the chairs, the pictures, the ornaments, and remembers accurately what he sees; the other has little tendency of the kind. Objects do not strike him with any thing like the same force, although he may be otherwise a very superior man.

Does Individuality confer any other remarkable quality?

It gives the memory of things that exist. It recollects, for instance, that platina is heavier than gold, that salt water supports bodies better than fresh, that the tower of Strasburg Cathedral is very high, and so on.

Does it give the memory of events that have happened? For instance, will it enable us to recollect accurately the adventures related in a history or novel?

No. If we read Peregrine Pickle, it will enable us to remember that Jack Hatchway had a wooden leg, and that Commodore Trunnion was blind of an eye, but to recollect the varied adventures of these characters depends on another organ—that of Eventuality.

To what class of persons is a good endowment of Individuality especially useful?

It is a valuable faculty to the botanist, the natural historian, the physician, the lawyer, and all who are obliged to load their memory with a particular description of details.

What is the character of those who have the organ large?

They are clever observant persons, with a great aptitude for remembering such facts as we have mentioned. Nothing escapes them; but they are often incapable of reasoning upon the knowledge they possess, and very often shallow; reflection and profundity depending upon a higher order of faculties.[44] A man who has Individuality and good reflecting organs combined, will be both a quick observer and a deep thinker. Watt seems to have been a person of this stamp.

Are nations variously endowed with this faculty?

varies much in different nations; it is smaller in the

44 "I accompanied two gentlemen to see a great public work, in one of whom Individuality was large, and Causality small; and in the other of whom the proportions of these organs were exactly reversed. The former, in surveying the different objects and operations, put question after question to the workmen in rapid and long continued succession; and nearly all the information which he carried away with him was acquired in answer to specific interrogatories. His mind scarcely supplied a step by its own reflection; and did not appear to survey the operations as a systematic whole. The latter individual looked a long time in silence before he put a question at all; and when he did ask one it was, What is the use of that? The answer enabled his own mind to supply a multitude of additional ideas; he proceeded in his examination, and it was only on arriving at another incomprehensible part of the apparatus that he again inquired. At last he got through; then turned back, and, with the most apparent satisfaction, contemplated the operations from beginning to end as an entire system. I heard him afterwards describe what he had seen, and discovered that he had carried off a distinct comprehension of the principles and objects of the work. It is probable, that a superficial observer would have regarded the first as the acute, intelligent, and observing man of genius; the person who noticed every thing, and asked about every thing; and the latter as a dull uninteresting person, who put only two or three questions in all, looked heavily and said nothing."—*Combe's System of Phrenology*, 3d edition, p. 479.

English than in the French head, and in the Scotch smaller than in either. The quickness of observation and readiness in details possessed by the French, depend upon the ample endowment which the nation enjoys of this organ.

Do the frontal sinuses[45] *prove an obstacle to the accurate ascertainment of the size of Individuality ?*

In the case of adults and old people, where the sinuses are large and approximate closely, they do. The best way to ascertain the dimensions of the organ, is to examine the heads of young people before the sinuses are formed. Even in adults, however, deficiency of the organ can never be mistaken.

23. Form.

Where is the organ of Form situated?

On each side of the crista galli[46] of the ethmoid bone; it gives width between the eyes, as may be seen in the heads of Vandyke and other artists eminent for portraiture.

What talent does it communicate ?

That of perceiving and recollecting forms. People differ wonderfully in this respect. One man from taking a glance at an object will sketch it accurately; another could not give a correct representation were he to labor for a month. It is a most material element in the talent for drawing; it enables us to take likenesses, and is, in fact, absolutely essential for artists of every description.[47]

---

45 The frontal sinuses are two hollow spaces—one on each side—above the root of the nose, formed by the receding of the inner from the outer table of the skull.

46 A small perpendicular projection arising from the upper surface of the ethmoid bone. The olfactory, or nerve of smell, lies on each side of the crista galli.

47 At the disinterment of the remains of Raphæl, some time ago, Horace Vernet, the celebrated French painter, requested permission to take a sketch of the ceremony. This was refused; but the artist was not to be baffled. Being present on the occasion, he took a keen survey of all that occurred, and in a few days from the mere force of memory—in other words from the power of his active form—he produced a very accurate and spirited representation of the scene.

In what nation is it large?

It is large in the Chinese, which accounts for the minute, almost frivolous, accuracy of their delineations. It is large, also, in the French, and I should suppose in the Italian head.

Does it communicate any other talent?

It gives the power of recollecting faces, especially if it be combined with Individuality; of this, George III was a good illustration. It also tends, especially if accompanied with an active Comparison, to the personification of abstract ideas, as that which represents Time under the symbol of an hour glass, or of an old man with a scythe in his hand; Innocence as a dove, Sin as a serpent, Death as a skeleton, and so on. Combined with Constructiveness, it enables milliners, mantua-makers, and tailors, to invent patterns and thus add to the varieties of dress.

24. Size.

Describe the situation and function of this organ.

It lies over the inner angle of the eye, immediately above the root of the nose. Its faculty is to give the idea of space, and the power of appreciating the dimensions of objects; in other words, the quantity of space which they occupy. It takes cognizance also of lineal space, or distance.

Would you not infer, that the function of this organ is involved in the preceding?

At first sight it may appear so to some, but Size is really a different faculty from that which perceives forms. We may have a perfect idea of the shape of a body, and a most inaccurate one of its bulk. Ask one man the length of a certain log of wood, and he will tell you with considerable accuracy by merely looking at it; ask another, and he errs egregiously. This shows that there must be a special organ for Size.

Is a good development of this organ useful to an artist?

It is, by enabling him to give each part of the representation its proper size; in other words, to keep the proportions accurate. To the landscape painter it is probably of great use; the accurate perception of perspective, being supposed to depend upon it. To artizans and mechanics in general, it must be a matter of importance to have a correct idea of Size. Those in whom the faculty is weak, will constantly require to have recourse to compasses and other measurements, for the purpose of adjusting the respective dimensions of what they are engaged upon.

25. Weight.

What is the peculiar function of the organ of Weight?

This organ, which adjoins, and lies to the outside of Size, is supposed to give the idea of the ponderosity of bodies; and, in general, of mechanical force and resistance. It is probably to this organ that the nerves of mechanical resistance convey the idea of the state of the muscles. If it is largely developed, that idea so communicated, will be proportionally vigorous.

In whom is it said to be large?

In those who excel in archery, skating, quoits, and all who have great facility in judging of momentum and resistance in mechanics. It is probably large in the heads of skilful pugilists, such as Randall, Ward, and Belcher. I should suppose it well developed in such men as Ducrow, and in good rope-dancers. Children who walk early are supposed to have it large. It is well marked in the heads of eminent engineers, and all who have a talent for the investigation of mechanical forces. Sir Isaac Newton, Sir David Brewster, Sir John Leslie, and Messrs Jardine and Stevenson, eminent engineers, afford instances in which it is strikingly developed. It is supposed by some, to give

the idea of the perpendicularity of bodies ; at least, several builders who possess this power in great perfection, are observed to have it large. This and the preceding organ are not so well established[48] as some others, and farther observations are still wanting to place them beyond the pale of probability. The existence of the faculties seems unquestionable.

26. Coloring.

Where is this organ situated?

Exactly at the middle of the eye-brows, between the organs of Weight and Order.

What is the nature of its faculty?

To communicate the perception of colors.

What happens when the organ is very small?

A difficulty is experienced in perceiving and distinguishing colors, and in appreciating their harmony. Such cases are often met with, and arise from a defective size of this part of the brain. Many people cannot distinguish brown from olive, green from blue, or yellow from orange ; while others, though not so defective as this, are unable to perceive harmony or discord in the arrangement or combination of colors.[49]

---

48 When we say that an organ is not well established, it is not to be understood that we infer, there is any faculty without a corresponding organ ; but simply, that phrenologists are yet undecided, whether the locality they have fixed on for the organ is the just one. If there be a faculty of Weight, there must be an organ ; whether the organ which has been assigned as the seat of this faculty be the real one, future observations must determine.

49 Dr Nicol has recorded a case, where a naval officer purchased a blue uniform coat and waistcoat, with red breeches to match the blue; and Mr Harvey describes the case of a tailor at Plymouth, who, on one occasion, repaired an article with crimson instead of black silk, and on another, patched the elbow of a blue coat with a piece of crimson cloth. It deserves to be remarked, that our celebrated countryman, the late Mr Dugald Stewart, had a similar difficulty in distinguishing colors, and the same remark applies to Messrs Dalton and Troughton. Mr Stewart discovered this defect, when one of his family was admiring the beauty of the Siberian crab-apple, which he could not discover from the leaves, but by its form

May not this depend on indifferent sight?

It has nothing to do with this, because the persons so circumstanced have, as respects every thing else, as good eyes as their neighbors. Many people hear perfectly well, and yet cannot distinguish one tune from another; it is the same with the eyes as regards colors.

In what class of persons is this organ large?

In artists distinguished for coloring, as Rubens, Titian, Haydon, Claude Lorraine, and Salvator Rosa; and in those individuals who have a passion for brilliant and gaudy dresses. Those who are particularly fond of flowers, and of birds with beautiful plumage, have probably the organ large; it is very large in Montreuil, author of the "French Florist." Poets, who are fond of describing the infinite hues and shades presented by nature, are well endowed with it.

In what sex is the organ generally largest?

In the female. Women, as colorists, have rivalled men; while for design, and the higher walks of painting, they are very greatly inferior. The passion for gaudy ornaments is, besides, stronger in them than in men.

Does the organ give a delicate taste in colors?

It is essential to the existence of such a taste, but Ideality likewise appears to be necessary.

SPECIES II.—FACULTIES WHICH TAKE COGNIZANCE OF THE RELATIONS OF EXTERNAL OBJECTS.

27. Locality.

Is not a very large frontal sinus liable, as in the case of Individuality, to be mistaken for this organ?

It may, and cases, doubtless, have occurred, where such

and size. Mr Dalton cannot distinguish blue from pink. Mr Troughton regards red, ruddy pinks, and brilliant oranges as yellows, and greens as blues, so that he is capable only of appreciating blue and yellow colors.—*Sir David Brewster's Letters on Natural Magic*, p. 31.

a circumstance has led to mistakes; but, generally speaking, the sinus does not ascend higher than the inferior portion of Locality; and in children, at any rate, a mistake of this kind cannot well occur, as the sinus, at that age, is scarcely ever formed. In the case of adults, no prudent phrenologist gives an unqualified opinion as to the size of this organ, except where the flatness or depression of the surface unequivocally proclaims it to be small.

How may a large frontal sinus be discriminated, in most cases, from this organ?

The prominences formed by the sinus are irregular in form, and generally horizontal in direction; the elevations occasioned by large Locality are uniform in shape, and extend obliquely upwards towards the middle of the forehead.

What faculty is connected with this organ?

Locality takes cognizance of the relative positions of objects;[50] it bestows a great aptitude for remembering places where we have once been, and a fondness for traveling. Persons who have it large seldom lose their way, and when they have once been at a place, can return to it with

50 "An individual well known in London by the name of 'Memory Corner Thomson,' is remarkable for an astonishing local memory. In the space of twenty-four hours, and at two sittings, he drew a correct plan of the whole parish of St James's, with several streets belonging to the parishes of Mary-le-bone, St Ann, and St Martin. This plan contained all the squares, streets, lanes, courts, passages, markets, churches, chapels, public buildings, houses, stables, angles of houses, and a great number of other objects, as well as parapets, stones, trees, &c., and an exact plan of Carlton House and St James's Palace. He executed all this without the aid of any plan, without compasses, without books, or any other data. He made out also, from memory, an exact plan of the parish of St Andrew, and he offered to do the same with that of St Giles in the fields, St Paul's, Covent Garden, St Clement's, and Newchurch. If a particular house in any given street was mentioned, he would at once tell what trade was carried on in it, the position and appearance of the shop, and its contents. In going through a large hotel, completely furnished, he is able to retain every thing, and to make an inventory from memory; but a dialogue, on the other hand, that he may have heard, even two or three times, will be quite new to him in the course of two or three days."—*Phrenological Journal*, vol. iv. p. 356.

peculiar facility. It confers a love of traveling and rambling about.

In what class of persons would you expect to find the organ large?

In such men as Columbus, Vasco de Gama, Mungo Park, and Captain Cook; and, accordingly, in the likenesses of these eminent men, it appears amply developed. It is large, also, in great geographers and astronomers, such as Malte Brun, Kepler, Galileo, Tycho Braché and Newton. Authors who describe, and artists who delineate scenery well, have, also, a large development. It is large in Tasso, Scott, Professor Wilson, Breugel, the lanscape painter, and in M. Jaubert, Professor of Oriental Languages at the Bibliothèque du Roi, whose passion for traveling is excessive.

Have the lower animals the faculty?

Yes. Dogs, by means of Locality, trace their steps homewards, even for hundreds of miles. The same faculty it is which directs birds in their periodical migrations, and the carrier pigeon in its extensive flights. The way, however, in which it often acts in the lower animals, is very obscure, and, indeed, perfectly inexplicable. A dog, for instance, has been sent many hundred miles by sea, and returned over land to the very spot at which it embarked. There have not been wanting instances, where the faculty has operated on the human subject in a somewhat similar way, and without the concurrence of sight. Metcalf, the blind traveler, was an instance of the kind. This remarkable man, if once in a place, could readily find his way back again; indeed, we every day observe blind men walking alone, and in perfect safety, through the most crowded streets, guided, doubtless, in their gloomy path by the mysterious influence of Locality.[51]

51 "It is common," says Mr John Alston, in his Report of the Blind Asylum at Glasgow, "for adults who reside in distant parts of the city to come to their

What are the abuses of Locality?

An excessive tendency to ramble about, and a total incapacity for remaining long in one place. This is sometimes so strong, as almost to amount to a disease. Such was the case with the Abbé Dabrowki, of Prague, in whose head the organ of Locality was enormously large. Dr Gall met, one day, at Vienna, a woman, in whom the development was so great as to amount to a deformity. In her, also, the passion for rambling was extreme.

28. Number.

Describe the situation and function of this organ?

It lies at the external angle of the eye, and when large, swells out the frontal bone at that particular spot, and likewise, occasionally, gives the outer extremity of the eyebrow an overhanging and drooping appearance. The function is the power of arithmetical calculation.

Mention a few individuals remarkable for a large development of the organ?

Zerah Colburn, the American calculating boy, George Bidder and Jedediah Buxton—all of them distinguished for their natural arithmetic—are instances in point. Playfair and Leslie, both of whom possessed great computative talents, had also large developments, and so had Wren, Inigo Jones, Hutton, Euler, and Kepler.

Is this organ larger in some nations than in others?

It is. In the Negro and Esquimaux head the organ is small; and these people are generally very deficient in arithmetical talent. Humboldt mentions, that the Chay-

---

employments without a guide. In farther proof of their capability of walking without an assistant, a young boy of fourteen years of age, whose parents resided six miles from Glasgow, was in the habit of visiting them. He was accustomed to leave the establishment without an attendant, traverse the whole length of the city, finding his way through the Calton, Bridgeton, along Rutherglen bridge, through that town and to his father's house. This he did with as much correctness as if he had been in full possession of vision."

mas, a South American tribe, have great difficulty in comprehending any thing which belongs to numerical relation. He says, that he never saw a man among them who might not be made to say that he was eighteen or sixty years of age; and he adds, that the corner of the eye is sensibly raised up towards the temple. Wafer observed the same remarkable want of calculating power among the Indians at the Isthmus of Darien.

Do great differences exist among individuals of the same country, as respects the faculty?

The differences are so obvious as to strike every one. Some men can solve, with little effort, the most difficult questions in arithmetic; others can hardly manage the simplest, let them labor as they please.

May this faculty co-exist vigorously with a weak general understanding?

Undoubtedly. Idiots are, sometimes, excellent computators.

Will a large organ of Number make a person a good mathematician?

No; other faculties are necessary, although Number is a very useful one. It was thought that some calculating boys, from the force of their arithmetical powers, would have excelled in mathematics, but the result did not correspond with the anticipation. As mathematics treats of configuration and space, or dimension, as well as of number, the organs of Form and Size are indispensable to eminence in that department.

Is this faculty possessed by animals?

The point has never been correctly ascertained. Some philosophers suppose, that the magpie possesses computation to a certain extent. Le Roy, for instance, supposes, that the creature counts three, while Nemours extends its

talents, in this respect, as far as nine. Such assertions, however, must be based on little better than conjecture.[52]

29. Order.

Where is this organ situated?

It lies between Coloring and Number, and is marked 29, in the bust.

What is its function?

To bestow a love of order and arrangement.

When the development is very large, how does it display itself?

In punctilious nicety about the manner in which things are placed, and the order in which they are done. The person is annoyed by confusion, and apt to be dainty and finical. He is an ardent admirer of the well known maxims, "Say every thing in its proper way; put every thing in its proper place; and do every thing in its proper time." His minute love of arrangement is not less annoying to those in whom the faculty is feeble, than their want of systematic regularity is to him.

What is the result of a small development?

Indifference to order and arrangenent. Confusion and want of neatness give no annoyance; the person is apt to be careless in his dress, disorderly in his household; and, unless his conscientiousness be strong, unpunctual to appointments.

To what class of persons is a large organ of Order especially useful.

To the mistress of a family, and particularly to domestic servants; it is essential to keepers of museums, to garden-

52 It is said that a dog must have this faculty, because it discovers if one of its young has been removed; but this, as Spurzheim remarks, it may perceive from the want of the individual so carried away, without counting the number of the whole.

ers, and to all who have charge of establishments of any kind.

Would you expect the organ to be very large in authors distinguished for the precision and order of their writings?

No; the powers of the organ seem to be confined to physical arrangement. Causality and Comparison are the chief systematizers. Such authors as Linnæus, Mason Good, and Cuvier were probably indebted to these organs, and not to the one under review, for their great power of classification.

30. Eventuality.

Describe the position and function of the organ of Eventuality.

It lies in the centre of the forehead above Individuality; and gives the power of recollecting events and phenomena. Books that abound in incident, such as Don Quixote, Robinson Crusoe, Gulliver's Travels, and Roderick Random, are characterized by marked Eventuality; and persons who have the faculty strong, will remember vividly the occurrences related in such works. Such persons are considered clever in the common meaning of the term; they pick up a knowledge of events readily, although it may so happen that they are perfectly unable to reason upon it, or turn it to any proper use.

Does Eventuality assist in acquiring a language?

No; but it will enable us to recollect any particular events recorded in that language. The power of acquiring language depends on a special organ.

What does Inquisitiveness depend upon?

Upon Eventuality and Individuality in excess, generally combined with Wonder. If Secretiveness is conjoined to this combination, the inquisitive tendency will be still greater.

Will a person in whom Eventuality is large, be necessarily of an inquisitive disposition?

Not in the common acceptation of the term, which is usually employed to designate a species of impertinence. If his reflecting powers be deficient he will be apt to show a meddling, inquisitive turn about paltry matters; if strong, he will despise this, and direct the faculty to the acquisition of really useful knowledge. Still, it is the same faculty at work, only in one case employed about trifles, in the other on matters of importance.

You have already hinted at the distinction between Individuality and Eventuality. Illustrate this point by some other examples?

Individuality concerns itself with what exists, Eventuality with what happens. Substantive nouns express the objects of the former, active verbs of the latter. When I say that Lord John Russell is a little man, that the Duke of Wellington has a Roman nose, or that camels have humps on their backs, it is Individuality which suggests these remarks; when, however, I observe that, after being challenged by Sir Robert Peel, Mr O'Connell contrived to get himself arrested, and then made a vow in heaven never to fight duels; that the Houses of Parliament were burned in consequence of overheating the flues; or that the Earl of Spenser rears the fattest cattle in England, then the observations are suggested by Eventuality.

31. Time.

Where is the organ of Time situated?

In the middle region of the forehead, on each side of Eventuality.

What talent depends upon the organ?

The perception of duration or time. It enables those who are well endowed with it, to keep time in dancing

and in music, to judge accurately of the intervals which elapse between given periods, and to conjecture the hour of the day with comparative precision without consulting the clock; it is essential to good versification. People differ in all these particulars, and the differences depend on the degree in which they are gifted with this organ.

Mention some other ways in which Time may manifest itself?

In the accuracy with which a regiment of soldiers fires at the word of command, or goes through the manual and platoon exercise by observing the movements of the fugleman. In those who keep bad Time in performing such exercises the faculty is feeble.

What is the cause of the difficulty which some people experience in learning to dance?

An inaccurate perception of Time; in other words, a small development of the present organ.

Is the organ considered as established?

No; it is only probable. The existence of the faculty, however, is sufficiently manifest.

32. Tune.

What function depends upon this organ?

The faculty which bestows the talent for music.

Where does the organ lie?

In the lateral portion of the forehead, to the outside of Time, and immediately above Order and Number.

Is it confined to the human species?

No; birds have the organ and its accompanying faculty. It is distinctly marked in the nightingale, the thrush, the linnet, and other singing birds. It is larger in the head of the male singing bird than in the female, which accounts for the superior power of song possessed by the former.

Is it not similarly marked in birds which do not sing?

No. Compare the head of the hawk, the crow or the eagle, with those of the tribe of songsters, and the difference will at once appear obvious in the region of Tune.

May not the inability of certain birds to sing, depend upon the organization of the throat, which may be so formed as to render singing impossible?

This objection has no force; because whenever nature has bestowed the talent for any thing, she has, at the same time, endowed the animal with the apparatus for exercising that talent. If the raven had the cerebral organization of the nightingale, nature, which does nothing in vain, would have given it the vocal apparatus for song.[53] The hawk is a ferocious, sanguinary animal; and it is armed accordingly with formidable claws, and a powerful beak, wherewith to exercise its particular instincts. Of what use would such armory be to a timid creature like the dove? or what would the hawk be, were it weaponless like the dove? In such a case, the lust for blood and thirst for destroying, which have been bestowed for the purpose of gratification, would be unaccompanied with any means of carrying these intentions of nature into effect.

---

53 An ingenious friend has stated in objection to this, that some men have great musical talent and yet cannot sing well, for want of good voice. Such an objection, however, is more specious than solid. The chief purpose of voice is speech, and man is not, like the nightingale, merely a singing animal, or like the hawk, merely an animal formed for destructive purposes. Supposing a man to have a good development of Tune, together with an indifferent voice, it cannot be said that his musical talent is thrown away upon him, and that, because he cannot sing, he cannot turn it to good purpose. Man has faculties which have enabled him to invent and construct instruments. from which he draws music far surpassing in sublimity and beauty, that of his own voice. I am not aware that Weber or Beethoven could sing well, yet what exquisite delight did not these men derive from their organ of Tune, and what wonderful works did it not stimulate them to produce? Another consideration is, that while birds, by living in accordance with the laws of nature, have their functions, and among others the voice, in a comparatively perfect condition, man, whose unnatural mode of life and disregard of the laws of physiology have tended much to injure his capabilities, does not generally enjoy the vocal powers, which, had he acted in accordance with the organic laws, he probably would have possessed.

Is there any reason to suppose, that the British will ever equal the Germans and Italians in music?

None. The organ in the British head is decidedly smaller; so that, although an individual may now and then arise, capable of contesting the palm with the Webers, the Rossinis, and the Handels; still, as a people, they can never compete with these nations in musical talent.

In whom is the organ large?

In all who have a decided talent for music, such as Handel, Glück, Weber, Beethoven, Rossini, Catalini, Pasta, Crescentini, and Gelinek.

Would you expect the organ large in every good performer upon a musical instrument?

No. A fair development, aided by an active temperament, and great perseverance, may make a very good performer, indeed; but one of the highest order, such as Paganini, Lafont, Dragonetti, or Nicholson, requires an ample organ of Tune. To eminent original composers, as Mozart, Haydn, and Auber, a large development is indispensable.[54]

Some people are fond of devotional, some of martial, and some of lively music. On what do such differences of taste depend?

On the state of the other organs. A person whose Veneration and Tune are both large, will naturally prefer sacred music; large Combativeness and Tune will induce a preference to martial music, and so on.

54 A lady incidentally, and without any reference to phrenology, informed me, that her female servant could not distinguish one tune from another, although her hearing was perfect. She farther mentioned, as an amazing circumstance, that the woman was constantly committing mistakes when the bells rung, as she was unable to distinguish the door bell from the dining-room one, although every other person in the family could do so with ease, so very different were the tones of the two bells. On examining the woman's head, I found the organ of Tune remarkably deficient, there being a flatness, or rather a depression in the site of the organ. I took a cast of her forehead, a copy of which is in the museum of the Edinburgh Phrenological Society.

Is the organ of Tune fully established?

The facts in support of it are so numerous, that this appears to be the case. The discrimination of the size of the organ is, however, so difficult, that, except in cases of extreme development or deficiency, mistakes are frequently committed in estimating it. This is particularly the case with sciolists in phrenology, who are apt to make a display of their skill more frequently with regard to this organ, than in relation to any other. In judging of musical talent, unless particular attention is paid to the training and excitement which the organ has received, error is very apt to be committed. Temperament, also, has a most important effect; and it ought not to be forgotten, moreover, that many persons sing and perform respectably, from little else than Imitation and practice.

33. Language.

What external sign indicates a good endowment of Language?

Generally prominence of the eyes, or their depression vertically.

Where does the organ of Language lie?

On the posterior and transverse part of the upper orbitar plate,[55] immediately over the eyes. When the organ is large, this plate is necessarily lower than in other cases, and the eyes, consequently pushed forward and downward.

What talent depends on this organ?

That of verbal memory. The person has a great knack at recollecting words; he acquires languages with facility, learns readily by heart, and is generally a great talker.

May not a person be eminent as a linguist, and yet

55 The orbitar plates are portions of the frontal bone, from which they go off backwards at right angles, forming a roof to the eye, and supporting the anterior lobes of the brain.

noway remarkable for the prominency of his eyes, in relation to the forehead?

He may; and hence mistakes are now and then committed by the inexperienced. If the organs of Locality, Weight, Size, Coloring and Order, be very large, and the eye-brows full and overhanging, the eyes will appear much less prominent than in other circumstances.

Do prominent eyes always indicate talkativeness or verbal memory?

Always, except when the prominency is occasioned by fat, as is sometimes the case with corpulent people, especially if they be of dissipated habits. These, however, are merely exceptions to a well established general rule.

How does it happen that very ordinary men so often surpass, while at school, those who turn out very greatly their superiors in after life?

This generally arises from their possessing a good development of Language, Individuality, and Eventuality; especially the first. Men of great talent are often only moderately endowed with Language, while people, otherwise common-place, have frequently the faculty in great perfection.

What results from a great development of the organ?

The person is a formidable linguist, or most insufferable talker, perhaps both. People of this sort have an absolute pleasure in hearing themselves speak. They are, literally, talking machines, and are rendered uncomfortable if not allowed to indulge in their favorite occupation. Their style of writing and speaking is apt to be diffuse, and to want condensation; they can scribble whole pages, and talk by the hour, about absolutely nothing.

What results from a small development?

Difficulty in acquiring languages—hence indifferent scholarship, a want of facility in expression, and a disposi-

tion to be taciturn. The writings of such persons contain hardly an useless word, so that they are often more valuable and interesting than the works of the other class.

Mention a few eminent individuals in whom the organ was large?

Swift, Haller, Leibnitz, Cobbett, and Van Sweiten. It appears large in the likenesses of Milton, who was a distinguished scholar, and a great master in his native language—witness "Paradise Lost," which, as a mere piece of verbal composition, and without reference to the sublimity of its ideas, is, perhaps, the most perfect work of modern times.

Is the organ of Language ever unnaturally excited?

In fever, mania, and drunkenness, this sometimes happens; the consequence of which is an inordinate propensity to talk, although the person may be, at other times, very taciturn. There have been instances where, from the excitement of the organ during the delirium of fever, a language learned in early life, but afterwards forgotten, has been recalled, so that the person could speak it fluently; only, however, to be forgotten so soon as the excitement by which it had been resuscitated wore away. Cases where the memory of Languages is lost, from disease of this organ, are numerous.[56]

---

56 I know a case of this kind. A literary gentleman was actively employed for some months in the compilation of a French and English Dictionary. He performed his laborious task, but at the end of it, so completely had his organ of Language been overworked by its long continued exertions, that he actually lost the memory of words. His knowledge of Greek, Latin, and French, which was very extensive, vanished from his mind, nor did he recover it till the energy of the exhausted organ was restored to its wonted power, by being allowed to rest. Some years ago, when laboring under a fever, accompanied with violent cerebral action, I lost, for some days, to a considerable extent, the memory of words, although in all other respects the mind was perfectly sound. If I wished a drink of water, I knew the thing which I wanted, but could not put a name upon it.

GENUS III.—REFLECTIVE FACULTIES.

What is the nature of the Reflective Faculties?

To produce the quality of reasoning or reflection. They compare one thing with another, and trace the relation subsisting between effects and their causes.

34. Comparison.

Where is this organ situated?

In the centre of the upper region of the forehead, immediately above Eventuality.

What is the nature of its faculty?

It enables us to trace resemblances and perceive analogies. Milton likens Satan's shield to the full moon, and naturalists speak of the analogy subsisting between animal and vegetable life. It is the organ in question which associates these objects or qualities together, and traces similitude between them. Persons in whom the organ is large, will trace a similitude or affinity between objects or events, which would entirely elude the observation of others with a smaller endowment.

Has it any other tendency?

It prompts to the use of figurative language; similes, metaphors, and allegories, all result from Comparison.

To what class of people is an ample endowment of the faculty valuable?

To poets, orators, preachers, and philosophical writers, in so far as it affords an abundant supply of imagery, and a wide and varied range of illustration.

Mention a few individuals whose heads give indication of a large development.

It appears large in Pitt and Dr Chalmers, and remarkably so in Thomas Moore, whose prolific power of comparison, as displayed in "Lalla Rookh," the "Loves of the Angels," and other poems, is unsurpassed, or rather un-

equalled. Roscoe, Henry IV, Burke, and Curran, show also a large development.[57]

In what nation is it peculiarly large?

In the Hindoo, the figurative style of whose language is proverbial. We should infer, indeed, from this peculiarity of the oriental tongues, that the organ was well developed in the heads of Eastern nations.

35. Causality.

Describe the position of this organ.

It lies in the forehead, on each side of Comparison.

What is its function?

It gives the idea of connection between cause and effect. He who is well endowed with it and Comparison, possesses a severe and logical intellect; he traces results from their origin, and is a sound reasoner. Men of this stamp are never shallow; they constitute the profound thinkers so rarely to be met with in society.

Is this a valuable faculty?

With the exception of Conscientiousness, it is, perhaps, the most valuable of the whole series. It is the faculty on which mainly depends the intellectual greatness of

57 I know a gentleman in whom the activity of Comparison is so strong, that it prompts him to compare sounds with colors, and names with physical objects. When a musical instrument is played, one tone seems to him to resemble blue, another green, another purple, and so on. The proper name, Combe, is associated in his mind with the figure of an urn, Simpson with an hour-glass, and Cox with a saw. When this individual was attending Dr Gall's lectures in Paris, some years ago, the Doctor was so struck with the appearance of the organ of Comparison in his forehead, that he pointed it out to his class, as an instance of the great development of that organ, having, at the moment, no knowledge whatever of the person, or the degree in which he was endowed with the faculty of Comparison. I know another gentleman who has the same tendency to associate together the ideas of sounds and colors, and these are the only two I ever met with. A case is related of a blind boy, who, on being asked what like the color of scarlet was, replied, that it resembled the sound of a trumpet. In this instance, it is possible that the association of ideas may have arisen from the boy being informed that soldiers wore scarlet coats, and that the trumpet was employed to call them together.

Locke, Bacon, Gall, and other illustrious names. The organ was very large in the heads of these great men. Kant, Dr Thomas Brown, Fichte, Mendelsohn, and, indeed, all men of eminently philosophical minds, exhibit an ample development of it.

To what pursuits does the organ lead?

To abstract philosophical studies in general. A strong love of logic and metaphysics is one of its tendencies; indeed, no person can be great as a reasoner without it.

Is it necessary in the physical sciences?

As necessary there as in the moral. Individuality gives us cognizance of facts, and Eventuality of occurrences; but it is Causality, joined with Comparison, which enables us to reason upon them, and turn them to proper use. The organ is large in the heads of Playfair, Cuvier, Guy Lussac, and other eminent natural philosophers.

Is Causality necessary for historical writing?

Eminently so. Without this faculty, history would be a mere series of details, without dependence or connexion. The springs which moved the different personages, and promoted the different events, would never be investigated, and the whole work would present a series of effects without any suitable causes. The works of all great historians, such as Gibbon, Hume, Robertson, Lingard, Smollett, and Napier, display a rich vein of Causality; nor can it be doubted, that the heads of these eminent men would display an ample development of the organ.

Is it necessary for poetry?

No; but poetry is vastly improved by the interfusion of a philosophic spirit derived from Causality. The faculty reigned in the sublime intellects of Milton and Shakspeare, and prevails every where through their mighty works. There is a great deal of Causality in the writings of Pope,

Dryden, and Wordsworth; it gives a philosophic hue to poetry, without impairing its imaginative character.

Does a person with distinguished reasoning powers always appear great in general society?

No. Men with good perceptive, or knowing organs, often appear to much greater advantage than those with the higher powers of mind conferred by eminent reflective faculties. A shallow, smart person, would be thought far more highly of by the bulk of mankind, than a Kant, a Leibnitz, a Bacon, or a Spurzheim. Brilliant men are not often profound; the circumstance, indeed, of a person appearing very great in a miscellaneous company, may generally be taken as an evidence, that his reflective faculties are not of a very high order.

What is the cause of this?

The reflective faculties of men, in general, are not strong, and they can neither appreciate nor comprehend profound reasoning. Good perceptive organs being more common, their manifestations are easily understood, and better relished; whence quick, but shallow men, strike the common mind more forcibly than deep thinkers.

What happens when Causality is small?

In this case the mind is illogical and inconsecutive. The individual experiences great difficulty in tracing effects from their causes, and is incapable of any thing like deep and connected reasoning.[58]

What are the abuses of Causality?

An excessive tendency to metaphysical speculations, to

---

58 From their feeble appreciation of the force of evidence, it is extremely difficult to convince such persons of the truth of phrenology. This is especially the case, if with their deficient reflecting faculties they combine much Self Esteem. To convince a shallow, conceited man of any one thing to which he opposes himself, is nearly an impossible task; and, after all, such persons are not worth convincing. Much sound argument has been thrown away in reasoning with people of this description.

the neglect of the practical pursuits of life. Kant seems an instance of the abuse of this faculty. He is very often profound, but speculative and abstract, and often unintelligible. In his head, the reflective organs greatly predominate over all others. Causality, however, is far less likely to be abused than almost any other faculty, if we except Benevolence and Conscientiousness.

Has Causality any influence on the formation of religious belief?

A very important influence, not inferior, perhaps, to that of Veneration and Wonder. Causality, enlightened by knowledge, leads mankind to infer a presiding First Cause, from the marks of wisdom and design which every where preents themselves in the material universe. Veneration prompts to revere the Being whose existence is thus inferred; while Wonder is the source of that astonishment and admiration with which we contemplate His existence and attributes.

THE TEMPERAMENTS.

What is meant by the Temperaments?

The Temperaments are certain states of the constitution which are found to have a great effect on the energy and activity of the brain, and system in general.

How are the Temperaments classified?

The pure Temperaments are four in number, the Lymphatic, the Sanguine, the Bilious, and the Nervous; but they are often found in combination; thus we have the Sanguine-Lymphatic, the Nervous-Bilious, the Nervous-Sanguine, &c.

What are the characteristics of the pure Temperaments?

In the Lymphatic, the body is full, the flesh soft and flabby, the hair and complexion pale, the eyes expressionless, the pulse slow, and the person indolent, inanimate, loutish, and insipid. In the Sanguine, the hair is red or of a light chesnut tinge, the countenance florid, the eyes blue and sparkling, the muscles large and tolerably firm, and the spirits lively and boisterous. The Bilious is characterized by dark hair and coarse skin. The muscles are less than in the Sanguine, but harder; and there is little fat. Altogether, this Temperament possesses much energy, and is the best for sustaining the system under great and long protracted efforts. The Nervous Temperament is distinguished by fine silky hair, pale complexion, small muscles, sharp features, and often delicate health. It is the most excitable and sensitive of all the Temperaments; but its efforts, though rapid and vivacious, are soon exhausted.[5]

---

59 "Who," says Cobbett, in the third letter of his 'Advice to Young Men,' "is to tell whether a girl will make an industrious woman? How is the purblind lover, especially, to be able to ascertain whether she whose smiles, and dimples,

What is the character of the mixed Temperamemts ?

This depends upon that of the pure ones out of which they are formed ; thus the Nervous-Bilious combines in itself the qualities of the Nervous and the Bilious, and so of the others.

What Temperament is most likely to be found in combination with another ?

Those which most clearly resemble each other, are the most likely to be united ; hence the Lymphatic and Sanguine, and the Nervous and Billious often go together. Sometimes, however, we find the most dissimilar in combination.

The state of the brain then is influenced by the prevailing Temperament ?

So much so, that, in inferring character, the Temperament requires always to be taken into consideration. Supposing a Lymphatic person to possess the same size and

---

and bewitching lips, have half bereft him of his senses ; how is he to be able to judge, from any thing that he can see, whether the beloved object will be industrious or lazy ? Why, it is very difficult. There are, however, certain outward signs, which, if attended to with care, will serve as pretty sure guides. And first, if you find the tongue lazy, you may be nearly certain the hands and feet are the same. By laziness of the tongue, I do not mean silence ; I do not mean an absence of talk, for that, in most cases, is very good ; but I mean a slow and soft utterance ; a sort of sighing out of the words, instead of speaking them ; a sort of letting the sounds fall out as if the party were sick at stomach. The pronunciation of an industrious person is generally quick and distinct ; and the voice if not strong, firm at least. Not masculine ; as feminine as possible ; not a croak nor a bawl ; but a quick, distinct, and sound voice." " Look a little also at the labors of the teeth, for those correspond with the other members of the body, and with the operations of the mind."—" Get to see her at work upon a mutton chop, or a bit of bread and cheese, and if she deal quickly with these, you have a pretty good security for that activity, that stirring industry, without which, a wife is a burden instead of a help." " Another mark of industry is a quick step, and a somewhat heavy tread, showing that the foot comes down with a hearty good will." " I do not like, and I never liked, your sauntering, soft-stepping girls, who move as if they were perfectly indifferent to the result."

The above is an excellent illustration of the difference between the Lymphatic, and the more active Temperaments. It is sketched by the hand of a master, and truth has guided every line of the pencil.

shape of brain of a Bilious one, he will manifest far less energy and activity of mind.

What does this arise from?

The brain, in common with the rest of the body, partakes of the functional energy or inactivity communicated by the Temperament. In the Lymphatic, for instance, the blood being sent with little energy to the brain, that viscus is naturally torpid in its actions. In the Sanguine and the Bilious, the reverse is the case; the pulse is stronger and quicker, a proof of the greater activity of the circulating system; and hence the brain is more vigorously stimulated, receiving from this smart passage of the blood through it, superior activity and power of function.

Does the torpor of the Lymphatic Temperament depend on any other cause than inactivity of circulation?

It is considered that it may, also, in a great measure, arise from the blood being of a more watery description than in the other varieties. At least, it is well known that in the Lymphatic there is a great predominance of the glandular system, and of the aqueous secretions.

Does quality of brain correspond with the excellence of the Temperament?

There is reason to suppose that it does. The texture of the cerebral system is conjectured to be very fine in the Nervous Temperament, and the reverse in the Lymphatic.

Does dissection demonstrate this?

In all likelihood it would do so, although the subject has not yet been sufficiently attended to by anatomists to enable us to speak decidedly. This much is certain, that the texture of the skull is influenced by the prevailing Temperament, being fine and compact in the Nervous, coarse and open-grained in the Lymphatic. Moreover, the muscles are firm in the former, and flabby in the latter.

Do particular Temperaments prevail more in some nations than in others?

Yes. The Lymphatic predominates greatly among the Dutch, and to a considerable degree among the Germans. The prevailing Temperament in France is the Nervous or perhaps the Nervous-Bilious. The Sanguine seems to prevail among the Swedes and Norwegians; and, combined with the Nervous, among the Irish.

What does genius arise from?

From an ample development of the intellectual organs, accompanied with a healthy brain and fine Temperament. The Nervous and Bilious, or a mixture of them, are in a particular manner the Temperaments of genius. Great genius, however, may accompany the Sanguine Temperament. Such is the case with Professor Wilson. It is difficult to conceive a purely Lymphatic person of distinguished genius.

Give illustrations of some of the Temperaments.

The Temperament of Pope, Voltaire, Keats, Kirke White, and Cowper, was evidently pure Nervous—that of Milton probably a mixture of the Nervous and Bilious—that of Shakspeare and Raphæl, of the Nervous and Sanguine—and that of Julius Cæsar, Oliver Cromwell, and Wellington, of the pure Bilious. Alcibiades and Achilles, seem to have been illustrations of the pure Sanguine, and Benjamin Franklin of the Sanguine-Bilious. The Temperament of Gall was Nervous-Billious; that of Spurzheim Bilious-Lymphatic. These facts we infer from what we know of the individuals by their actions and writings; and by their portraits, where these exist.

Does not this doctrine of the Temperaments throw great obstacles in the way of predicating character?

It does not; for a knowledge of quality of brain is as much one of the phrenological conditions, as that of quantity. A true phrenologist always calculates the effect which Temperament produces, seeing that on this, the

quality of the cerebral texture seems chiefly to depend. In estimating the strength of two men, we do not judge absolutely by their size; the one who is least in dimensions, may yet possess the greatest energy in his muscular system. If, however, the muscles of the large man are not only bulkier, but of equal quality, as respects firmness and stamina, he must needs be the more athletic of the two. Other things being equal, the larger the muscles or brain, the greater will be the power possessed by them. A large lymphatic brain will display more vigor than a small one, although less than that of a brain acted on by more energetic Temperaments.

MISCELLANEOUS QUESTIONS.

What faculties first display themselves?

The propensities, with one exception—that of Amativeness, which is the organ that last manifests the faculty belonging to it.[60]

Whether do the Perceptive or the Reflective organs act earliest?

The Perceptive; children soon begin to notice objects, but a long time elapses before they can reason upon them, or trace their relations.

Are the organs generally contiguous whose functions bear some resemblance to each other?

They are. Thus Causality and Comparison, which have a strong analogy in their functions, are contiguous. The same is the case with Ideality and Wonder, with Time and Tune, with Combativeness and Destructiveness, with Adhesiveness and Philoprogenitiveness, and so on. This curious collocation of parts bearing a functional resemblance, is a very strong evidence in confirmation of phrenology.

What is the cause of mental precocity?

Premature development or excitement of the intellectual organs.

What gives rise to such prematurity?

It is difficult to say, but it seems to be connected in general with a high Nervous Temperament. Lymphatic or Bilious children are seldom precocious. Precocity is pecu-

60 Amativeness is of late development. The same remark applies to the moral and intellectual organs, which acquire a considerable increase about the age of puberty. "It is now for the first time, that youth begins to feel strongly the impulse of moral obligation, and place a first estimate on moral conduct. Hence they are now recognized in judicial proceedings as moral agents. And hence, it is by no means uncommon for boys who had been previously vicious and unmanageable, to become correct and docile."—*Phrenological Journal*, p. 497, vol. vii.

liarly common among the scrofulous, rickety,[61] and consumptive. These states of constitution are accompanied with an irritable state of frame, which extends its influence to the brain, and thus causes a premature manifestation of its functions.

Why do precocious children generally turn out very ordinary as adults?

It is a law of nature, that when an organ is vehemently exercised, before acquiring full consistency and strength, its functions become impaired. A horse sent to the turf very young has its constitution often ruined, and the same is the case with youthful prize-fighters and recruits; the brain is no exception to the general rule.

Ought the mind of a child who exhibits marks of early genius, to be much exercised?

Quite the reverse. We ought to consider the brain of such a child as in a state of unnatural excitement bordering on disease; and if it be fond of thinking or studying much, the habit ought rather to be checked than encouraged. If we work the brain much, it is ten to one that it gets diseased, and the child is either cut off early, or lives to be, for ever after, a very common-place person, perhaps a blockhead. Hydrocephalus, or water in the head, is sometimes produced in children by over exertion of the brain.[62]

Does the same rule apply to dull children?

---

61 "Rickety children," says M. Monfalcon, "have minds active and penetrating; their wit is astonishing; they are susceptible of lively passions, and have perspicacity which does not belong to their age. Their brains enlarge in the same manner as the cranium does." "This wonderful imagination, this judgment, this premature mental power which rickets occasion, has but a short duration. The intellectual faculties are soon exhausted by the precocity and energy of this development."—*Dictionnaire des Sciences Medicales*, vol. xlvi.

62 An American physician, Dr Brigham, has published a little work which throws a flood of light upon this important subject. A reprint of it was recently made by Messrs Reid & Co., booksellers, Glasgow, to which I added a variety of notes. I know few works of the present day calculated to do more good than that of Dr Brigham's "Influence of Mental Cultivation on Health."

Not so powerfully. The minds of these children ought to be exercised so as to give health to, and stimulate the brain; they need the spur instead of the bridle. Even here, however, there is a limit which it is dangerous to transgress. The brain of no child whatever ought to be much worked; moderate exercise is all that should be attempted. Very great evils result from school education being too severe and too early begun.

How happens it that dull children often turn out very clever?

From the fact, that in some individuals the intellectual organs are slow of reaching maturity, either from late growth or late excitement. Some minds are very late of being evolved. Gesner, the Swiss Poet, was, at the age of ten years, declared by his preceptors incapable of any attainment; and Swift, Thomson, Sir Walter Scott, and Dr Johnson, were very dull lads.

From what parent do children chiefly derive their qualities?

In color and form, the father, if these are in him very strong, transmits a greater share of his qualities, apparently because he is frequently before the mother, and thus impresses her strongly with the idea of them; but in giving temperament and shape of brain, the mother's influence seems to be the greatest. Hence a clever woman and an ordinary man, are more likely to have talented children than the converse. Men of genius generally marry dull women—hence their children are often dull.[63] Another reason is, that such men frequently infringe the organic laws, by overworking their brains, and not studying the rules of health sufficiently; defective brains are in this way transmitted to their children.

63 If both parents are talented, there is every chance of the children being so. The union of Godwin and Mary Wolstoncroft, produced Mrs Shelley, the distinguished author of Frankenstein; and many other examples might be adduced.

Why are the first-born of parents who marry very young generally inferior in intellect to those that come afterward?

Parents communicate their qualities of brain to offspring. A child produced at a time when the cerebral system of its father and mother is still immature, partakes of the defect and retains it through life.[64]

What is the best plan for insuring, as far as possible, a good brain to our offspring?

The first great point is obedience to the organic laws of marriage, which command us to choose for partners only such as have a good cerebral organization. The next is ample nourishment in childhood, with considerable bodily and moderate mental exercise.

In which sex do the faculties soonest reach maturity?

In the female. Woman attains her full stature and proportions earlier than man; and the same law prevails also with regard to the manifestations of her mind.

---

64 I confess myself a participator in the vulgar belief that impressions made upon the mother's mind during pregnancy may affect the offspring. There are many cases to prove this. Mr Bennett relates a very striking one in the "London Medical and Physical Journal." A woman gave birth to a child with a large cluster of globular tumors growing from the tongue, and preventing the closure of the mouth, in color, shape, and size exactly resembling our common grapes; and with a red excresence from the chest as exactly resembling in figure and general appearance a turkey's wattles. On being questioned, before the child was shown her, she answered that, while pregnant, she had seen some grapes, longed intensely for them, and constantly thought of them, and once was attacked by a turkey cock. James VI. of Scotland, had a great abhorrence of a drawn sword, and was, withal, timid and cowardly; which difference of character from that of all the line of Stewart which preceded and followed him, has been attributed, not irrationally, to the circumstance of Rizzio having been butchered before the eyes of Queen Mary, then *enciente* with the future monarch. According to Esquirol, the children whose existence dated from the horrors of the first French Revolution turned out to be weak, nervous, and irritable in mind, extremely susceptible of impressions, and liable to be thrown, by the least extraordinary excitement into absolute insanity. The story of Jacob and the rods, as related in the 30th chapter of Genesis, is a proof of the belief in ancient time that parental impressions may affect the offspring.

Is mental maturity attained at the same age in all nations?

No. In the tropics this occurs several years earlier than in the colder regions.

Has size of brain any effect upon the voice?

It has, especially if the organs of Firmness, Combativeness and Destructiveness are large. Large-brained people have generally a loud, energetic pronunciation—small-brained the reverse.

Why are certain individuals much liked by some and hated by others?

Individuals with large organs of Benevolence, Self-Esteem, and Destructiveness, will be objects of love or aversion according to the dispositions of those they associate with. If they come in contact with people who are also largely endowed with the two latter organs, they will probably be disliked, from the almost necessary collision of faculties which must ensue betwixt the parties. Meeting with persons in whom the organs in question are small, or only moderately developed, no such collision takes place; and their Benevolence having uninterrupted sway, comes into operation, and attracts towards themselves the kindly feelings of those persons.

Some people are characterized by strong and permanent likings and antipathies. What is the cause of this?

It arises mainly from a great development of Destructiveness and Firmness. If they take a liking to any person, the former gives it warmth, and the latter endurance; and the same with regard to their antipathies. When the moral sentiments, however, are favorably developed, such conduct will not be frequent.

A servant has been under two mistresses. One esteems her a person of excellent temper, the other quite the reverse; how are such discrepancies to be accounted for?

They arise, undoubtedly, from the different constitution of mind possessed by each mistress. If the servant is destructive, and the mistress the same, the hasty temper of the former, will probably often appear; if the mistress is of a mild disposition, the organ of Destructiveness in the servant will not be called into activity, and she will be regarded by her employer as possessed of a very good temper.

What does this teach us?

It teaches us that in selecting servants, care should be taken to procure those whose dispositions will accord with our own. By neglecting this obvious rule, quarrels are perpetually occurring, and a great deal of domestic annoyance is the result.

Does it teach any thing else?

It does, and something still more important. If a man, for instance, with large Destructiveness, Combativeness and Firmness, marries a woman similarly organized, there is a great chance of unhappiness, unless the parties have the most admirable prudence and self-command. Common observation points out the consequences of such ill-assorted unions.

If a woman with a large active brain, marries a man inferior in this respect to herself, what is likely to ensue?

She will rule her husband. As already mentioned, a large brain acquires an ascendancy over a small one.

How is this reconcileable with the well known fact, that weak women sometimes rule men greatly superior to themselves in intellect and force of character?

Such men will often give way in trifling matters to their wives for the sake of peace, but not in affairs of real importance. A sensible man will not run the risk of quarrelling with a silly woman, when, by yielding in things of no great moment, he can keep her quiet. Independent of this, strong minded men are often very much attached to their

wives, however much inferior to themselves; and are naturally not indisposed to gratify their whimsicalities. When a man, intellectually superior to his wife, is ruled and overawed by her, it will be found that he is her inferior in the energy of the propensities. These, when large or active, give force to the character, and a natural predominance to the individual over others more highly gifted with intellect, but with feebler propensities. Such, sometimes, is the secret of female sway over minds intellectually superior to their own.

Why is the love of parents towards their children almost always greater than that of children towards their parents?

Because in the first case both Adhesiveness and Philoprogenitiveness come into operation, whereas in the second it is Adhesiveness alone that is gratified.

What does eccentricity arise from?

From a want of due balance in the faculties. If one organ or more, is large in proportion to the others, or in a state of high activity, it will produce that irregularity of character to which the term eccentric is applied. Eccentricity frequently degenerates into madness.

Some persons possess an unbounded flow of animal spirits, and a hilarity which nothing can subdue; from what does this proceed?

From great activity of brain, accompanied often with deficient prudence and reflection, and a large development of Hope, Ideality, and Wit.

What is the cause of such activity of brain?

It is constitutional, and generally accompanied with a high Sanguineous Temperament.

When an organ is much exercised, have we ever pain in the site of it?

Very often. Hard-thinking produces a sense of fulness or pain in the forehead, the seat of the reflecting organs.

In excitement of Amativeness, there is frequently a sense of heat at the nape of the neck. When there exists a strong desire to travel, pain is sometimes felt in the region of Locality,[65] and in cases of spectral illusions over the perceptive organs.

What is the cause of spectral illusions?

These phenomena depend on a morbidly excited state of some of the perceptive organs such as Form, Size, or Color; whence images are presented to the mind without the coöperation of the external senses. If the organ of Form, for instance, becomes as strongly stimulated by some internal cause as it would be by an object presented to it by the eyes, some image or other will be formed, and the person will actually believe he sees what, in reality, has no existence. Morbid affections of the nerves of sight seem to have the same influence in producing spectral illusions.

Is the feeling of hunger experienced, strictly speaking, in the stomach?

No. The term "craving of the stomach," so often used to express hunger, is not in reality correct. The brain is the craver, and is excited to a craving state only by emptiness of the stomach, unless the organ of Alimentiveness be so large, or so stimulated by some internal morbid action as to need no such excitement; or unless disease be present

65 "A young lady," says Dr. Gall, "had, always a great desire to travel. She eloped from her father's house with an officer. Grief and remorse undermined her health. I attended her, and she made me remark two large prominences which, she said, the pain she had endured had caused to grow on her forehead. These excrescences which appeared to her the consequences of divine wrath, were in fact the organ of Locality, to which she had never paid any attention." To this I may add, that a lady of my acquaintance, in whom the organ of Philoprogenitiveness is very largely developed even for a woman, and whose love of children is extreme, informs me that when distressed or anxious about her family she experiences pain at the back of the head, just over the seat of the organ. Heat in the nape of the neck is a common attendant of excited Amativeness.

in the stomach, so as to transmit to the brain the sensation which, during health, is transmitted by inanition alone.

People are sometimes afflicted with imaginary voices speaking to them; can you account for this?

It may be explained in the same way as apparitions. There are unquestionably certain parts of the brain which take cognizance of sounds; we call the nerve of the ear the organ of hearing, but strictly speaking it is not; it is merely the medium for conveying sounds to the brain, where the true organ resides. Now, suppose that the portion of the brain appropriated to this sense is stimulated by some internal cause, in the same way as it is by real sounds conveyed to it by the nerve, the person will have the idea that he hears, and that often as distinctly as if subjected to the stimulus of actual noise. Fanatics and deranged people sometimes imagine they hear angels, and even the Deity speaking to them; and persons perfectly deaf have at times sensations as of voices addressing them, just as the blind are occasionally haunted by spectral illusions. All these phenomena are explicable on the principles just mentioned.

What are dreams?

Dreams are merely spectral illusions, with this difference, that in the former only certain of the organs are vivified by the internal stimulus, while the rest are asleep; whereas, in the latter, these are all in the usual waking state.—When I see a ship sailing, in a dream, the organs of Form, Coloring, &c. are stimulated from some internal cause, as they are in spectral illusions.

How does it happen that people of weak intellect sometimes display considerable powers of mind during an attack of fever or inflamed brain?

It is to be accounted for from the organs of the brain being stimulated by the excitement of the disease; whence

the faculties connected with these organs display unusual force, and an intellectual energy is exhibited, of which, at other times, the person gives no indications. As soon, however, as the disease is removed the stimulus communicated by it to the organs ceases, and the customary state of imbecility returns.

Explain why forgotten events are sometimes brought back to the mind in dreams.

This is explicable on the same principle. During the dream, certain portions of the brain which bear a relation to the forgotten event are stimulated, and a resuscitation of it is the consequence. A man, for instance, hides or mislays money, and forgets where: but the brain being excited, the circumstance is vividly recalled; and if he be ignorant, as generally happens, of the cause of this phenomenon, he straightway infers, that something supernatural has occurred, and that he has been favored with intelligence by spiritual agency.

Are all the cerebral organs liable to stimulation in madness, dreaming, drunkenness, &c.?

So far as we know they all are; and there is no obvious reason why any of them should be exempted from this law.

Give a few instances of the stimulation of particular organs.

People who never displayed any talent for poetry, music, calculation or eloquence, have exhibited the whole of these qualities in considerable perfection during an attack of insanity, or even in dreams; the most chaste have become wanton in their conduct, and indecent in their language; the most sedate, witty; the most prosaic full of imagination. Even persons who never before displayed any thing like logical power have reasoned profoundly, constituting instances of what Pinel calls "Folie Raisonnante," or Reasoning Insanity. Such changes undoubtedly arise from

the particular stimulus which has been communicated to the organs of the above faculties.

How do you account for the fact, that people of talent have sometimes small, and dull people large heads?

To bestow talent, the intellectual organs only are necessary. A person may have these well developed, and yet the organs of the Propensities and inferior Sentiments may be so small, as to cause the head to be below the average size. Again, if the former class be small, and the latter very large, the head may be one of ample dimensions, and yet its owner a most ordinary mortal. Where organs not remarkably developed, accompany strong faculties, the Temperament and quality of brain must be very superior.

In a person of talent, would you expect a large intellectual development?

I would, provided his talent was of a comprehensive kind; but it is quite possible to possess a genius for a particular thing, and yet have a poor general development of the intellectual organs. For instance, he may have great talent in calculation, in music, or in scholarship, by virtue of large organs of Number, Tune, and Language. People are often called clever, from possessing, in great perfection, one particular faculty; and having, what phrenologists would call a poor development of brain, they are brought forward as illustrations of the fallacy of the science. George III. was called by some people a clever man, because he possessed great power of recollecting individuals whom he had formerly seen. There was once a man who could repeat from memory the whole of the New Testament. Many, from hearing of such a prodigy, would infer, that he must have been possessed of vast genius, yet he was little better than an idiot.

Has a tall man a larger brain than one of moderate stature?

A sufficient number of observations are still wanting to determine this point satisfactorily; but it seems probable, that the brain of a tall, broad, powerful man is, generally speaking, larger than that of a man of an opposite make. Large men, however, are usually inferior in intellect and energy of character, to the middle-sized, and, *cæteris paribus*, are far less likely to possess the same amount of genius with the same size of brain—the nervous energy being wasted over their unwieldy trunks in the processes of digestion, assimilation, secretion, &c.[66]

In certain cases of insanity, there is no apparent disease of the brain; how is this reconcileable with phrenology?

There may be no apparent, but there must be real disease. Facts prove that disease may exist without its being possible to ascertain it by dissection. Such is often the case in tetanus, tic doloureux, and paralysis, where we can generally detect no change whatever in the nerves, the seat of these diseases. In like manner, digestion, or the biliary secretion, may be disordered, without the concomitance of any appreciable change in the stomach and liver; so it is with the brain in what are called mental diseases. One of the most distinguished of modern physiologists, Mr Lawrence, states, that he has examined the heads of many

66 If large men have, generally speaking, larger brains than the middle-sized, the exceptions to this rule must be very numerous. Gall, Byron, Cuvier, and Napoleon, had very large heads, and none of them exceeded the ordinary size; the two latter, indeed, were rather below it. The same remark applies to Godwin, whose head is of great size. With regard to the fact of large bodies being unfavorable to mental activity and power, Spurzheim remarks, that "A large body will require the greater part of the brain and nervous system to be employed in its functions, and there will then remain a small portion for the manifestations of the superior faculties." I may here remark, that when the body is growing rapidly, the mind becomes weak, on account of the drafts made upon the brain to affect the growth; in other words, to supply the nervous energy necessary for the proper performance of the digestive and assimilative functions.

insane persons after death, and has hardly seen a single brain in which there were not obvious marks of disease.[67]

Some people object to the science, because phrenologists are unable to show each organ in a detached and separate form, instead of homogeneously connected together. What do you think of this argument?[68]

Every sensible person must think it a very absurd one. If the purpose of nature had been to settle the doubts of a few incredulous individuals, instead of constructing the brain after the fashion best adapted for the performance of its functions, then, doubtless, she would have mapped off the limits of every organ with mathematical nicety and distinctness; but it has not pleased her to do this, at least, so far as our powers of observation at present enable us to discover; and, accordingly, we must just take things as we find them—satisfied, that the animal economy exhibits no instance of one organ performing more than one function, and that in assigning different functions to

67 I have stated, for argument's sake, that in certain cases of insanity, there is no apparent disease of the brain, but the fact may be doubted. Dr Wright, of the Bethlehem Lunatic Asylum, says, that in one hundred cases of insane individuals, whose heads he had examined, all exhibited signs of disease, more or less. A French writer, who has examined a still greater number, arrives at the same conclusion. In short, I believe, that in every case, a skilful person, who is accustomed to examine the brains of lunatics, will detect signs of disease. They may be so slight as to escape the notice of a common observer, but that they will be manifest to the minute, experienced, and talented pathologist, I have no doubt whatever.

68 Let such objectors point out (as was suggested, in a humorous paper in the Phrenological Journal,) where the chin ends, and the cheeks begin, and then we shall allow their arguments to possess some force. No human being can point out the line of demarcation which separates those features from the cheeks, yet, I presume, every man of sound mind admits the existence of chins, and the possibility of telling whether they are large or small. The organs of the brain are not a whit more intimately blended together, than is the chin, or even the nose, with the cheeks. In looking at a mountain, no person can tell the precise point where it commences, and the plain terminates; still common sense informs us, that there is a mountain before us. In looking at the rainbow, or through a prism, we see a variety of different colored rays, yet who can define the limits of each? Though perfectly distinct, yet they are blended together in a way that defies the pointing out of their limits. So it is with the organs of the brain.

different parts of the brain, nature is only following one of her own invariable laws.

How do you reconcile this assertion with the fact, that the tongue is a single organ, and yet possesses taste, sensation, and motion, three different functions?

There are certainly three functions combined in the tongue, but we must consider that each of these is effected by means of a distinct organ or nerve. We have thus a nerve for taste, one for sensation, and a third for motion—so that, strictly speaking, the tongue is not a single organ, but combines in itself several, by means of which its varied functions are performed. Its different nerves can only perform their own functions and no other; thus, in the gustatory nerve, resides the sense of taste alone, not that of feeling; just as, in the brain, the organ of Locality gives us perception of places, and not that of music or coloring. The fact, therefore, that one organ can perform only one function holds as true in the tongue as in the brain; and throughout the whole animal economy it is precisely the same.[69]

What is crime?

The abuse of certain of the propensities; thus, theft is the abuse of Acquisitiveness, and murder of Destructiveness.

What is the origin of motives?

Motives are desires or inclinations produced by the activity

69 Till the discovery of Sir Charles Bell, no person could anatomically demonstrate the existence of distinct nerves for motion and sensation. Spurzheim, judging from analogy, inferred, that there must be separate nerves for each of these functions, and urged anatomists to prosecute the subject, and endeavor to find them out. Sir Charles Bell was the lucky discoverer. He ascertained that the one set of nerves arises from the anterior, and the other from the posterior part of the spinal marrow, that they unite almost immediately, and are so intimately blended that they cannot be distinguished or disentangled. They are, in fact, as completely, to all appearance, incorporated as the different parts of the brain, and constitute a texture seemingly even more homogeneous than the cerebral mass.

of the faculties; and this activity is owing to the excitement of the cerebral organs, either constitutional, or the effect of external circumstances, or, what is most frequent, arising from both.

Would every man have acted in the same way as the murderer Hare did, if placed precisely in the same circumstances?

No. Few men could possibly have done so, and none unless they had possessed a cerebral organization similar to Hare's. No longing for money, no privation, however great, could have made thieves or murderers of such men as Fenelon, Sir Isaac Newton, Melancthon, or Howard.

Seeing the natural depravity of Hare, and the way in which that depravity was acted upon by strong external circumstances, is it right to punish such a man for his misdeeds?

Undoubtedly. The law itself is a most powerful controlling motive for preventing the perpetration of crime. It is equal to a special restraining faculty of the strongest description; and did no law exist, such crimes as he was guilty of would be of constant occurrence. A man guilty of murder is hanged, both to remove him from the world, as a nuisance to society, and to proclaim the fate that will befal others who act in the same way.[70]

What is the cause of certain organs being too large or too active?

This very often arises from infringements of the organic laws in marriage. If a man with great Combativeness and Destructiveness, marries a woman similarly endowed,

---

70 "A vicious man must be restrained as a wild beast for the good of others, although, for aught we know, his faults may, like the acts of the beast of prey, be chargeable rather on his nature; and while we feel justified in confining, and the culprit is perhaps conscious how richly he deserves his fate, we may pity in our hearts, and acknowledge that we ourselves have often been less excusable."—*Dr. Elliotson.*

their children will probably possess the preponderating organs still larger and more active than the parents. The activity of the propensities is often increased by drinking, and the contamination of bad society; for the same reason that the vigor of the reflecting faculties is augmented by reading, and other salutary intellectual exercises.

May deficiency in the size of certain organs be also occasioned by infringements of the above laws?

Undoubtedly. A man and woman very deficient in Conscientiousness, will be apt to produce dishonest children. If both parents have a poor intellectual development, their offspring almost always inherit the same, only, in most cases, to a worse degree.

Have the heads of criminals any peculiarity of formation?

They have, in so far that not an instance can be pointed out of a criminal, or notoriously worthless character, having such a moral and intellectual development as Melancthon or Franklin. In the heads of criminals, there is very generally a great predominance of the animal propensities over the moral sentiments. Some malefactors, however, are drawn into crime more by unfavorable circumstances than by natural depravity; while others, strongly disposed to crime, but rather fortunately situated in worldly matters, refrain, through dread of the consequences, from committing it.

In some heads, the propensities, moral sentiments, and intellect, are pretty well balanced. What character results from this combination?

It will be good, bad, or indifferent, according to the situation in which the individual is placed. If in favorable circumstances, well educated, and under the influence of good example, he may turn out a very fair member of society; if exposed to the contaminating influence of vice, he will be apt to run into it, and become a rogue.

From what do such differences proceed?

From the particular faculties which are most exercised, taking the lead. In virtuous society, the higher feelings, such as Benevolence, Veneration, and Conscientiousness, are cherished, and the lower ones, as Destructiveness, Combativeness, and Amativeness, repressed; whence the former, (in a case where both are equally strong by nature,) predominate. Reverse the case, and the predominance is given to the latter. No good example could ever have made a virtuous character of such a man as Bellingham, armed, as he was, with an enormous supremacy of the lower faculties; nor could any conceivable familiarity with scenes of vice, have made a villain of Fenelon or Howard.

Is not one faculty modified by the influence of another?

This is true as respects the result of the faculty, but not as respects the force of the faculty itself. For instance, a man offends me, and my excited Destructiveness prompts me to knock him down, but I am restrained by Cautiousness from so doing. The desire to strike is here no way lessened; in other words, the activity of Destructiveness is not abused; the result to which it would otherwise lead is merely modified.

Is the activity of one organ ever increased by that of another?

Undoubtedly. If we look at a beautiful child, we experience at once kindly feelings towards him, from Ideality calling our Benevolence into active operation. If Ideality is offended by a loathsome reptile, Destructiveness is excited, and we are disposed to trample it under foot, however innoxious the creature may be. Conscientiousness, offended by false suspicions against one's self, excites Destructiveness. Dr Combe suggests, that it is from the contiguity of the organs of Adhesiveness, Combativeness, and Destructiveness, that domestic dissentions are the

most bitter and irreconcileable of any.[71] The latter organ is violently excited by drinking, which may perhaps be explained by its being in the immediate neighborhood of Alimentiveness, the organ which is peculiarly excited by intoxication.

What should be the main purposes of education?

To cultivate and direct the moral and intellectual faculties, by means of precept and example, and to repress, as much as possible, the undue activity of the lower feelings. In most people, the three classes of faculties are nearly on a par, and upon education and example does it greatly depend which shall take the lead in life.

How do you make it appear, that Phrenology is useful in education, seeing that it is easy to ascertain a person's talents and disposition without the aid of this science?

The greater our knowledge of the mental faculties, the more perfectly are we made acquainted with the manner in which they ought to be applied. Phrenology gives us this knowledge in a way superior to any other, and, therefore, must be eminently useful in education. Independently of this, talents and dispositions are very far from being so easily found out as is commonly imagined; and whatever tends to facilitate their discovery, must be looked upon as a matter of high importance. Both these purposes being served by phrenology, its uses in education are sufficiently obvious.[72]

71 "A curious example of the effect of Benevolence in rousing Destructiveness, is furnished by the history of Montbar, a Frenchman, who was so furiously exasperated by reading, in early life, accounts of the cruelties of the Spaniards, in America, that he joined the Bucaneers, a body of pirates, long the scourge of navigators in the West Indies. So much and so frequently did this man gall the Spaniards, during the whole of his life, that he acquired from them the name of 'The Exterminator.' Of course, the independent energy of his Destructiveness itself must have been very great."—*See an admirable paper by Mr Robert Cox, in the Phrenological Journal*, vol ix. p. 402.

72 "Those who have so little soul as to ask what is the use of any discovery in nature, may be told, that phrenology is calculated to assist parents in the choice of occupations for their children. And it may be of much service in confirming

Has the size of the lungs any influence on the brain's activity?

Doubtless it has. When the lungs are large, the blood is more highly vivified, the circulation stronger, and the brain nourished more completely than when these organs are small. Byron was a middle-sized man, but his lungs were gigantic in their proportions, which may, perhaps, account in some degree for his astonishing cerebral activity. At the same time, it is not to be inferred, that because a man's respiratory organs are large, his brain will necessarily be an active one. All I mean to say is, that—other things being equal—a large-lunged man will display a greater vigor of mind than one with small lungs.

Have all kinds of food the same influence on the energy of the brain?

No. Animal food stimulates the cerebral structure, and contributes to its activity much more than vegetable.

Do phrenologists assign any organ for memory?

They do not. Memory is an attribute of all the intellectual faculties, and not a primitive mental power. If it were, a person whose memory was good for one thing, should possess it in equal perfection for all; but this is not the case. We meet with people who have great memory for words, and an indifferent one for events; who recollect localities and forms accurately, but have little power of remembering music. This proves, that as memory is not

---

some moral views which good sense ought, indeed to have suggested. Humility and benevolence are two leading duties. If we detect the signs of intellectual deficiency and vice in our own heads, we may learn to think humbly of ourselves; and being put in possession of true self-knowledge, endeavor to strengthen what is too weak, or repress what is too strong. If we detect the signs of great talents and virtues in the heads of others, we may love them the more, as superior and highly favored beings; whereas, if we detect the signs of great virtues and talents in our own heads, we may learn to take no praise to ourselves, but be thankful for the gift; and if we detect the signs of intellectual deficiency and vice in others, we may learn to pity, rather than to censure."—*Dr Elliotson.*

a separate faculty, it cannot have a special organ. A person with a good development of Language, has a memory or words; a second, with large Number, for calculation; a third, with large Tune, for music, &c. Thus, memory is connected with all the intellectual faculties, and is merely one of the modes of their activity.

What opinion would you form of a person who has a bad memory?

Either that his intellect, wholly or in part, has never been cultivated, or that it is naturally very common-place. Memory being the manifestation of vigorous faculties, it follows, that when it is bad, these faculties must also be wanting in energy, either from natural feebleness, or from want of exercise. No maxim is more false, than that "great wits have short memories." The memory of every man of talent is by nature a good one, in matters having relation to his talent. If he allows his faculties to rust, by not employing them, he has only himself to blame for his defective memory.

Why does memory so strikingly fail in old age?

Because the faculties, of which it is merely the manifestation, fail.

What is the cause of enthusiasm?

It may arise from various sources. Thus, when Tune is very large and active, the individual is enthusiastic about music; when Veneration and Wonder predominate, he is an enthusiast in religion; with Combativeness and Destructiveness very largely developed, he may be an enthusiastic soldier or prize-fighter. Ideality gives poetical enthusiasm, and also vivifies that arising from the other faculties. Large Hope, with small Cautiousness and Causality, produce the scheming enthusiast, and so on. In all, an active temperament is generally found.

Give a phrenological explanation of grief?

The faculties are so constituted with relation to external objects and occurrences, as to be affected agreeably by some of them, and the reverse by others. Thus, Acquisitiveness is gratified by pecuniary gain, and annoyed by loss; Adhesiveness delights in the society of a friend, and suffers pain at his death. Grief, then, is simply the painful affection of these or other faculties, and while the excitement continues, no reasoning or consolation is able to root out the painful sensation from the mind. Grief is to Adhesiveness, or whatever organ is painfully affected, exactly what toothache is to the nerves of the teeth; when the excitement of these nerves subsides, so does the pain; and in like manner, when the irritated organs in the brain return to their habitual condition, the grief will give way to calmness and peace.

What is envy?

It is the result of Destructiveness and Self-Esteem acting in combination, and producing hatred of another's success.

What is selfishness?

The quality of mind resulting from great Acquisitiveness and Self-Esteem, with deficient Benevolence.

What does indolence arise from?

From inactivity of brain, either natural to the person, and in constant or frequent operation; or accidental, the result of indigestion, bad health, or some other temporary cause.

What is the cause of insipidity of character?

It is connected with an inert brain and small Destructiveness, and is most apt to accompany the Lymphatic Temperament.

What is the phrenological theory of Jealousy?

The state of mind is a combination of selfishness with suspicion; that is to say, it proceeds from Self-Esteem,

Secretiveness and Cautiousness, in combination with Acquisitiveness, or some other faculty desiring enjoyment.

What does hypocrisy result from?

From Secretiveness in excess, with deficient Conscientiousness. To persist in a course of hypocrisy, a great deal of Firmness is requisite.

From what does credulity proceed?

It arises, generally, from too much Veneration, Wonder, or Hope; but its direction varies according as one or other of these organs is large. Veneration renders people credulous with respect to what is affirmed by those whom they revere; Hope with respect to the occurrence of wished for events; and Wonder with respect to whatever is marvelous or mysterious. Very large Self-Esteem, it may be farther observed, disposes a flattered person to credulity, by giving him the idea that he really merits the adulation bestowed. Credulity is, in a great measure, counteracted by a powerful and well instructed understanding.

What is the cause of incredulity?

A deficiency of the organs which dispose to credulity is one cause. It may, however, arise in many cases from ignorance. Thus, an illiterate clown laughs in your face, if you tell him that the earth is shaped like an orange, and moves round the sun, or that the stars which we see twinkling in the firmament, are, each of them, a great deal larger than the earth,

Some people are exceedingly nice, dainty, and finical, in all they say or do; what is the cause of this?

It probably arises from a great development of Individuality and Order, particularly where the organs of the Reflective Faculties are moderate, and the person is not familiar with science, and the more arduous pursuits of human life.

From what do impudence and forwardness proceed?

An individual in whom Combativeness and Self-Esteem are large, and Secretiveness, Cautiousness, Love of Approbation, Benevolence, and Conscientiousness moderate, will certainly be forward and impudent. Knowledge of the world, by teaching the insignificance of self, tends to allay impudence.

What is the cause of frivolity?

Frivolity results from a small and very active brain. A large brained person may be dull, but he can hardly be frivolous.

What is the cause of presence of mind?

Its chief elements are Combativeness, Firmness, Secretiveness, Self-Esteem, Hope, and probably Individuality. The two first give courage and resolution to meet the unexpected contingency; the third enables the person to conceal his feelings of alarm or astonishment, if he has any; the fourth and fifth inspire him with confidence, and the last communicates quickness of observation, which will make him notice every thing at a glance, and thus give him an opportunity of promptly encountering whatever may occur.

Religious people are sometimes seized with the idea of their extreme unworthiness in the sight of God, and in consequence thereof, become exceedingly melancholy, and at last deranged. What does this arise from?

From great Veneration, and small Hope, and Self-Esteem. If to this combination, there is a large development of Conscientiousness, the person will be apt to accuse himself of heinous offences against the Deity; and, if he possesses much Destructiveness, be haunted with the idea of eternal punishment. Fanaticism, and every form of religious enthusiasm and insanity, are to be traced, without difficulty, to the immoderate or ill-regulated action of some of the organs of the brain.

Some people acquire knowledge readily, and as readily forget it : in others the reverse happens. How do you explain such differences ?

It is believed that they are occasioned by difference of quality of the brain, and active Temperament giving quickness of memory, and an inactive one rendering it. *cæteris paribus*, slow but retentive. The causes, however, of these and other differences of memory are still under investigation.

Why are women's prejudices stronger than those of men ?

Partly because in the female brain the Reflective organs are smaller, and partly because women mingle less with the world, and, therefore, enjoy fewer opportunities of having their prepossessions effaced by the friction of society. If men would address themselves more to the intellect, and less to the vanity of females, the latter would not only get rid of many prejudices, but occupy a far higher place as intellectual beings than they can possibly do in the present constitution of things.[78] Queen Elizabeth, and the Catherines of Russia, are striking examples of female vigor of intellect ; and the present age boasts of many illustrious examples, though in a different sphere of life, and in a different walk.

May activity of brain exist without power ?

---

73 The present century is more distinguished than any which has preceded it for the production of eminent females. Witness Baillie, Hemans, Bowles, and Landon, in poetry—Edgeworth, Ferriar, and the Porters, in prose fiction—De Stael, in political disquisition, and the illustrious name of Somerville, in the physical sciences. Such instances as the two latter, sufficiently demonstrate that even in those walks where the male intellect is supposed to be peculiarly strong, it may occasionally be rivalled by that of the other sex ; and that it would be so much oftener, were women more favorably circumstanced for the development of their energies, can hardly admit of a doubt. Still, in a general sense, the superior size of the male brain will always give that sex a superiority.

It often does. A small brain, in combination with a high Nervous or Sanguine Temperament, will display activity; but, from its deficient dimensions, power, or intensity of function, will be wanting. To display the latter quality, a large brain is necessary. Dr. Spurzheim was of opinion, that length of fibre in the brain produces activity, and that breadth communicates power.

May a person of common-place talent show power of mind?

He may, but it will be the power of the propensities, and not of the intellect. A dog-fighter or an ignorant hackney coachman, may in this sense, be said to show more cerebral vigor than a Shakspeare or a Bacon.

Have all nations the same tendency to emancipate themselves from the bonds of superstition?

They have not. Other things, such as education and intercourse with other nations being equal, those nations in which the Reflective organs exist in greatest perfection, will most readily unthrall themselves from superstitious absurdities. The difficulty of getting quit of them, however, must be doubly great, even with good intellect, where a large development of Wonder and Veneration is common, as is the case with the Hindoos, and other Orientals.

What nations possess the most intellectual form of head?

Those, undoubtedly, which are denominated the White, or Caucassian variety. Their tendency is constantly to progress in refinement, while most other races remain in their primitive state of barbarism, or, at most, never go much beyond it. If the Negroes, the American Indians, the Hottentots, and other savage tribes, had possessed the European form of brain, they would have civilized themselves many centuries ago, and been in every respect on a par with the Whites. On the contrary, they have done nothing for themselves, and the little that has been done

for them is the work of others. Some of these races are so deficient in intellect, that it has been found impracticable to educate them: such seems to be the case with the Aborigines of New Holland, Van Dieman's Land, and the United States of America. In the White races, on the contrary, placed under the most unfavorable circumstances for moral and intellectual improvement, as in Turkey and modern Greece, we can see the seeds of all the noblest faculties of our nature; and no sooner is the dead weight of tyranny and superstition which prevents their growth removed, than they burst into all the promise of a fruitful harvest. The Mongolian form of head has an intellectual development between that of the Caucassian and Ethiopian, and accordingly, we find that some of the nations which possess it, such as the Chinese and Japanese, have made considerable strides in civilization; but having attained this, they continue stationary, as we at present find them, and seem incapable of advancing a step further; at least, by their own efforts. When the frontal and coronal regions of the brain are generally well developed in a nation, its tendency will be towards intellectual and moral pursuits; and unless some strong external counteracting agency is at work, the people will speedily become civilized. Where the posterior and basilar regions predominate, the nation will be governed by the lower propensities, and civilization an imperfect process.

Are any of the lower animals gifted with what is called reason?

Some of them are so, although it is common to deny them the possession of this quality. If a dog leaps upon a table and is well whipped for the same, why does he cease to repeat the offence? Simply because his reason tells him that a repetition of it will lead to a renewed punishment. As we have already mentioned, the organs of the Reflecting faculties are not altogether wanting in some of

the more sagacious animals. A few of them, indeed, such as the dog, the horse, the monkey, and the elephant, possess a greater share of intellect than some men.

Are there any portions of the human brain, which have no corresponding portions in the brains of the lower animals ?

There are. The convolutions in which Veneration, Wonder, Conscientiousness, and Ideality reside, are peculiar to the human brain, and so are the organs of the Reflecting faculties, unless, indeed, we except such animals as the dog, the monkey, the horse, and the elephant, in which the reflecting organs exist to some degree. None of the lower animals possess any portion of brain which is not enjoyed by man.

Is not phrenology a difficult science, seeing that it requires attention to so many circumstances, such as age, temperament, health of brain, and education ?

Phrenology is not difficult to those who will take the trouble of studying it as it ought to be studied ; and even if it were difficult, this is no argument against its utility and truth. With regard to the number of circumstances to which it demands attention, the science is not otherwise situated than any other. They are part and parcel of itself; they are certain of the conditions that belong to it: and to study phrenology without attending to them, would be as absurd as to attempt getting a proper knowledge of physiology without anatomy, or of astronomy without mathematics. Phrenology regards not merely the form and size of the brain, as is often ignorantly supposed, but also the diversified causes which affect its activity and vigor, the laws according to which they operate, and, in general, every circumstance tendingto influence the mental powers.[74]

74 The opponents of phrenology are continually disregarding these conditions. Phrenologists positively declare, that no correct inference can be deduced in cases of old age and diseased brain ; yet we have lately the skull of Deacon Swift

Does phrenology lead to any evil consequences as respects religion?

It interferes with religion in no respect. The Edinburgh Phrenological Society was founded by Dr Webb, one of the most distinguished ornaments of the Church of Scotland; and when we consider the number of excellent and pious divines, and others, who believe in phrenology, we have a pretty conclusive answer to the idle fears of some well-meaning people, that this science is dangerous to religion.

Phrenologists make a person's disposition to depend upon the shape of his brain. Does not this make man an irresponsible being?

Phrenology leaves the question of responsibility precisely as it found it. No person now pretends that every one is by nature, equally talented and virtuous. The Scriptures distinctly recognize a difference of moral and intellectual gifts, when they announce that, "unto whomsoever much is given, of him shall much be required," clearly declaring, that God did not make every one alike, and that He would exact from us in proportion to the degree with which we

---

brought forward as an evidence against the science, in the face of the notorious fact, that the Dean died at the age of seventy-eight, had been subject to loss of memory, and frantic fits of passion, eleven years before his death, and that the last five years of his life were passed in idiocy. The most amusing thing connected with such cases is, that phrenologists are accused of always having a loop-hole to escape by. If they had made it one of the principles of the science, that from an old and diseased brain, it could be inferred what sort of character the individual possessed in youth and health, and if such a test was, on trial, completely to fail, the only inference would be, that the phrenologists were wrong; but when they distinctly state the conditions of the science, what right has any man, in testing it, to overlook those conditions, and then set up a cry about loop-holes? If a medical man were asked how much laudanum might be safely given to an adult, and were to answer, forty drops, would he be responsible if the person who asked him were to give the same quantity to a child, and thus destroy it? As well might this person accuse him of getting out by a loop-hole, when he declared, that the dose was destinctly mentioned as for an adult, and not for a child. If the opponents of phrenology choose to try this science by rules which its professors positively renounce, they are acting a part equally illogical and absurd.

were gifted with his bounties—demanding one talent from one man, and ten from another. The Scriptures thus point out a marked difference of endowment among men, and phrenology does no more. For such differences there must be some cause, and the science in question ascribes them to peculiarities of physical organization in the brain; but to say that this leads to irresponsibility more than any other doctrine, which admits of natural differences of mental endowment, is to assert a palpable and childish absurdity.

Seeing that matter is subject to death, phrenology, by connecting the mind with it, surely militates against the doctrine of the soul's immortality?

In reality, it does nothing of the kind. All that phrenologists contend for is, that in the present life, material organs are necessary for the mental manifestations, just as eyes and ears are necessary for sight and hearing, or a stomach for digestion. The opposite doctrine, that in this state of being, the mind acts independently of organization, does, in reality, militate against the immortality of the soul, and degrades the mind to a level with the dust; for it makes it a changeable essence, subject to infinite alterations, weak and fickle in infancy, strong and vigorous in manhood, imbecile in old age, and not unfrequently afflicted with idiocy and madness. If an immaterial spirit is liable to such changes, why may it not be subject to death itself? Those, therefore, who oppose phrenology on the above grounds, are casting aside a doctrine which does not bear against the immortality of the soul, and blindly grasping at one which almost necessarily infers its destructibility.

Is not madness a disease of the mind?

Not, properly speaking, although it is customary so to consider it. Madness arises from a distempered state of the organic apparatus, by which the mind works; it is a

symptom of diseased brain, just as indigestion is of disordered stomach. Considered as a separate entity, we may as well speak of the death of the mind as of its disease. In short, we ascribe madness to an unhealthy state of the nstrument which the mind makes use of; as in looking through a telescope, the glass of which is soiled, we see objects obscurely, not from any defect of the objects themselves, but from their being seen through an imperfect medium.

What class of persons are likely to be the bitter enemies of phrenology?

Those who themselves possess a defective moral or intellectual development. Some men of great talent and perfect integrity, have opposed the science through ignorance, but their opposition, so far from being of an immitigable character, would disappear at once before the light of a proper knowledge of the subject. This has already happened in many instances; and some who formerly ridiculed phrenology as an idle chimera, are now among the most able and enthusiastic of its supporters.

What is the main object of phrenology?

This is made sufficiently apparent by the whole tenor of the preceding pages, and hardly admits of a condensed reply. It may be stated briefly, that the purpose of the science is to give man a knowledge of himself, and to point out the true method of studying the mind, and of directing and applying its energies to proper uses. Phrenology is a study which tends eminently to virtue; in particular it teaches toleration and mutual forbearance. By demonstrating the natural variety of human dispositions and talents, and the innateness of our strongest motives, it loudly urges us to judge charitably of the actions of others, and to make allowance for their imperfections—to lay upon

See D'Holbach

no individual more than he is able to bear, and to desist from the mad attempts which have so often been made to assimilate to one common standard, the opinions of the whole community. On the philosophy of education, and on the treatment of criminals and the insane, phrenology throws a flood of light.

APPENDIX.

No. I.

The relative size of the different organs is designated by phrenologists as follows:—

1.	8, rather small.	15.
2, idiocy.	9.	16, rather large.
3.	10, moderate.	17.
4, very small.	11.	18, large.
5.	12, rather full.	19.
6, small.	13.	20, very large.
7.	14, full.	

The figure 12, therefore, annexed to the name of an organ, signifies that it is rather full, and 19 means that it is between "large" and "very large." And so on.

No II.

PHRENOLOGICAL ANALYSIS OF THE CHARACTER OF GEORGE CAMPBELL, EXECUTED FOR MURDER.

On the 29th of September, 1835, George Campbell was executed, at Glasgow, for murder. As the crime was characterized by peculiarly atrocious features, and his conduct on receiving sentence, marked by unparalleled ferocity, I was anxious to ascertain how far the developments, in a phrenological point of view, harmonized with so strongly marked and singular a character. Having asked permission of the Magistrates to take a cast of his head after death, the request was, in the most liberal manner, at once granted, and a cast was accordingly taken. On examining this cast, I, as well as every one conversant with phrenology, by whom it was seen, perceived at once that it, in a most remarkable degree, confirmed the doctrines of Gall. Conceiving, however, that a previous knowledge of the individual might have had some influence in swaying our judgments, and making us see a greater analogy between the physical organization and the mental character than was actually warranted by circumstances, I came to the resolution of sending the cast to an eminent phrenologist in Edinburgh, for the purpose of learning what inference he—without any bias, and in perfect igno-

rance of the person from whom it was taken—would draw from it. To prevent the possibility of any suspicion being roused on his part, the cast was forwarded, *not to him*, but to another gentleman, who was requested to deliver it into his hands, without saying whose head it was, by whom it was sent, or from what quarter it came. To make assurance doubly sure, that portion of the neck at the angle of the jaw, marked by the pressure of the rope, was carefully removed. No external mark was thus left to indicate that the person had perished by strangulation, nor did the countenance display the slightest appearance of violent death. This fact may be verified by any person who chooses to examine the cast. The gentleman to whom it was sent performed his part with scrupulous fidelity, and handed the cast to the object of its destination. "Mr ———," says he, "had no information except what he has prefixed to his paper, and the knowledge of the fact that the cast was that of a dead man." This information refers to the age, temperament and education of the criminal, circumstances which must always be known before any thing like a just deduction can be drawn.

Campbell was of Irish parentage. In appearance he was a good-looking and rather prepossessing young man. In stature, he stood about five feet seven inches, was cleanly made, and rather athletic. While very young he entered the army, where he remained seven years. Of his *general* conduct there, I am unable to learn any thing that can be depended upon; suffice it to say, he was at one time severely flogged for striking his sergeant. On leaving the army, he went to his father's house, but soon left it in consequence of some family quarrels. He then took up his lodgings with a woman named Han[illegible] with whose daughter (and with the mother also, if accounts [illegible] be be trusted,) he lived in a state of fornication. Hanlin's house was a most abandoned one. Lord Meadowbank, one of the Judges before whom Campbell was tried, pronounced it with great truth and force of language, "a den of infamy, and the old woman the presiding demon of the place." It was for murdering this woman that Campbell paid the forfeit of his life. He had frequently threatened to murder her, and one day carried his purpose into effect by literally, and in the most determined and ferocious manner, trampling her to death. After committing this crime, he made no attempt to escape, but went and informed the neighbors that the woman had killed herself by drinking. He was apprehended, tried and convicted, *very much to his own astonishment;* and when sentence was passed upon him, he burst forth into a volley of imprecations against the judges, such as never before polluted a court of justice—threatening, at the same time, with horrible language, to strike the criminal officers who offered to remove him. Those present on

the occasion describe his conduct as unutterably horrible and disgusting. On being taken to the condemned cell, he seemed more attentive to his food than any thing else, complained bitterly of the jail allowance, and expressed great satisfaction when supplied with food of a better quality. He was grossly ignorant, obdurate, and impenitent. The respectable Catholic Clergymen by whom he was attended (for he belonged to that Church) had great difficulty in making him comprehend almost any thing. To the last he denied his guilt. He may have acknowledged it privately to his confessor, but this, of course, is not known. He was vain of his person, and inclined to dress neatly. As a proof of this, he devoted a quarter of an hour, immediately previous to his execution to curling his hair. On mounting the scaffold he displayed wonderful firmness, walking erectly, tossing his head back in a theatrical manner, and having a bold, swaggering appearance. All accounts agree in representing his life, so far as it is known, as rude, turbulent and debauched. To the young woman with whom he cohabited, he was attached, although this did not prevent him from occasionally beating her, I suppose, in his drunken fits. The attachment was mutual on her part, and remained unweakened, even after he murdered her mother; she visited him in jail subsequent to his condemnation, and seemed much affected by his situation. Having made these preliminary remarks, let us now turn to the Phrenological Analysis. It is as follows, and sufficiently vindicates the skill and acumen of the gentleman by whom it was made: —

Plaster cast—size a little above average—temperament nervous-bilious—age 25—uneducated—dissipated.

DEVELOPMENT.

Instinct of food, (Alimentiveness) large,	18
Amativeness, large,	19
Philoprogenitiveness, very large,	20
Concentrativeness, full,	14
Adhesiveness, large,	19
Combativeness, very large,	20
Destructiveness, very large,	20
Secretiveness, very large,	20
Acquisitiveness, large,	18
Constructiveness, small,	8
Self-Esteem, extra large,	22
Love of Approbation, very large,	20
Cautiousness, rather large,	16
Benevolence, moderate,	11
Veneration, large,	18
Firmness, very large,	20
Hope, large,	18

Conscientiousness, rather full,	13
Wonder, large,	18
Ideality, moderate,	11
Wit, moderate,	11
Imitation, rather full,	12

INTELLECT.

Individuality, rather large,	17
Form, full,	14
Size, full,	15
Weight, full,	14
Coloring, full,	14
Locality, large,	19
Number, rather full,	12
Order, large,	18
Eventuality, full,	15
Time, large,	19
Tune, large,	18
Language, rather large,	16
Comparison, moderate,	10
Causality, moderate,	11

CHARACTER INFERRED.

I was struck with a resemblance of this cast to that of the too famous Thurtell, in the Phrenological Society's collection; only that Thurtell's Benevolence was larger, and his head generally larger; and on turning to the development preserved of Thurtell in the Phrenological Journal, vol. I. page 328, (but not till I had noted down that of the cast sent me,) I found them to agree to a great extent. The individual from whom this cast was taken, being uneducated, and having possessed an active temperament, would give unrestrained vent to a degree of animalism and selfishness, which must have rendered him a nuisance to his neighborhood. He has the organization of gross sensuality in all its three points. Even when sober, he had a tendency to brawling and bullying—a compound of impudent assurance, self-conceit, vanity, insolence, tyranny, obstinacy, violence, and cruelty; but, when drunk, a strait-waistcoat, or a cell in the police-office, would be absolutely necessary. He would be loud, boisterous, opinionative, and contentious, and his oaths and imprecations, would be horrible; while his abuse would have in it an energy, malignity, and grossness peculiarly his own. His selfishness, would be unmitigated; grasping without ever giving, would characterize him. His indifference to the misfortunes or sufferings of others would be marked; and scenes of suffering, such as executions, floggings, surgical operations, prize and cock-fights, would greatly delight him.

A single word, which he felt as slighting or ridiculing him, would be returned by a blow; but many an insult he would put on others, and in many a brawl he would be engaged. Nevertheless, he would not expose himself to unnecessary danger, but would calculate his adversary's strength before he proceeded to beat and bruise him or her; for his utter want of refinement and generosity, would make no difference between sex or age, saving always the very young—for the only soft corner of his heart seems to have been love of children. He was cunning, and probably a measureless liar, both in his vain-glorious boastings, and for all other selfish ends. He was a plotter and manœuverer, but although, from miserable reasoning powers, his schemes would be ill-laid, he would have great pride in being thought a "deep dog." He was superstitious, a lover of the marvelous, and accessible to religious terrors; a *ghost* would settle him in his most boisterous moments. He would court society, and dislike solitude, seeking, of course, to be always the cock of the company; for there would be about him a great share of vulgar self-importance.

The Knowing faculties seem good, and must have given considerable aptness and quickness. The Locality would give a roaming turn, and a knowledge of places. There must have been order and arrangement, which might show themselves in neatness and tidiness in dress. There is Music, or the love of it, strong; and Time so largely endowed as not only to aid music, but to give the power of telling the hour at any time without looking at the clock. The Reflecting faculties are very poor indeed, which would produce a deficiency in sense, and an utter blindness to the simplest consequences. This defect would render abortive many a plan to deceive. Gambling and betting would have for this unfortunately organized being, peculiar charms. He loved money, and would not be scrupulous about the means of getting it; while every farthing of it would go for selfish and chiefly sensual indulgences.

The cast appearing to have been taken after death, I asked, and was informed that the individual is dead, and "has ceased from troubling;" and I congratulate all who knew him, on the riddance. I should like to learn how he died; it could not be peacefully in his bed. Query—Was he hanged for beating out some one's brains, or otherwise murdering with ruthless brutality?

If such was his fate, I have only to say, that in that enlightened system of criminal treatment to which the country is coming, because *it must*, it needed not to have been so. A Penitentiary Department will come to be allotted for the constitutionally violent, brutal, and cruel, who will be put within walls for a long course of reformatory education on the first convic-

tion, by which their dangerous character is clearly proved. In a Penitentiary, founded on the humane principle of reformation without inflictive vengeance, even such a being as this might have been humanized: at least, he would not have been permitted to annoy and endanger society, by a long course of violence —to end, perhaps, in murder.

REMARKS ON THE FOREGOING, BY R. MACNISH.

I am doubtful whether Secretiveness and Acquisitiveness are so large as is given here. The thickness of the temporal muscle not being evident from a cast, has probably led the very able writer of the foregoing to over-rate them. He seems also to have made both Time and Tune larger than is justified by the appearance of the cast. Some, who have seen the cast, have objected that the distance from the ear to Individuality is larger than we might have been prepared for; but Phrenologists have long ceased to regard that measurement as any indication of the power of the intellect. The distance, may be caused by a large middle lobe of the brain, as is the case in the present instance. The proper way to ascertain the point, is to look how far forward the interior lobe projects from Constructiveness. The great size of Combativeness and Destructiveness (both 20) uncontrolled by his Benevolence, (which ranks only so high as 11,) and called into fierce action by liquor, easily accounts for the murder. His astonishment at the verdict of "guilty," probably arose from deficiency in the power of understanding the force of testimony, owing to the smallness of the Reflecting organs. Ignorant people are very apt to indulge in absurd hopes. His great Love of Approbation, and his large Order, sufficiently explain the foppish freak of arranging his hair in curls at such a time, as well as the marked neatness of his dress as he appeared upon the scaffold. It is difficult to say what his religious feelings might have been, as probably his mind was never directed to them till after he was condemned. His denial of the crime makes good his claim to the character of a liar. His Love of Approbation (20) would induce him to make it appear that he was innocent, and his Conscientiousness (only 13) would be no match for this strong feeling. The affection of the woman for him was very natural. He was a good-looking fellow, and was doubtless so much attached to her by his large Adhesiveness as to display affection when in good humor; and when strong marks of affection are bestowed on a woman, she is certain, in most cases, to return it. The organ on which the Instinct of Food is conceived to depend is as large as 18, which, perhaps, may explain his conduct with respect to the jail provisions, already alluded to, as well as his fondness of liquor. His good Time and Tune would probably give him a fondness

for dancing, for which his figure was well adapted; but whether he really was given to this amusement, I have not been able to learn; that he was so, however, I have very little doubt. His great Amativeness (19) was sufficiently apparent in the circumstances of his sensual career.

Altogether the head of this man is such, that no good Phrenologist, would hesitate one moment to say that the lower propensities must have been very predominant, prevailing lamentably over the Intellect and Moral Sentiments. His mode of life was extremely unfavorable to the exercise of the two latter, and must have tended to give to the first an enormous preponderance. Ignorance and dissipation acting together on such a mind, could hardly lead to any other result than the gallows. The analysis, to which I have ventured to prefix these observations, will speak for itself. It is, perhaps, one of the most skilful displays of phrenological acumen of which we have any record, and speaks volumes for the science. Wherever the man's character was known, the inference accords most minutely with it; and there is every reason to suppose, that, were those points cleared up, of which we are still ignorant, the correspondence between them and the deduction would not be less striking. The concluding paragraph of the analysis is most important, and well worthy the attention of legislators.

No. III.

ANOTHER CASE IN WHICH NATURAL DISPOSITIONS AND TALENTS WERE INFERRED FROM THE CAST OF A HEAD.

About four years ago, a cast of a head was sent to Mr Combe, by a gentleman residing at a considerable distance from Edinburgh, with a letter expressing "a strong curiosity to know what idea you will form of the party, without any previous hint of his character, and merely by examining his head. I may mention simply," continues the writer of the letter, "that the head is that of an uneducated person. If you will be so good as to write me what you think, I shall return you an answer at length, stating, as fully as I can, what I conceive to be the real character, intellectual and moral, of the individual. Of this man I can speak minutely. He is a very marked character; and, so far as I know Phrenology, his head is a complete index of himself." No other particulars were furnished.

Mr Combe's engagements preventing him from undertaking this task, he put the cast into the hands of Mr James Simpson, who examined it carefully, and drew out the following document.

Cast of the head of an uneducated man, seemingly under middle life—general size of head very large—temperament not discoverable from the cast.

MEASUREMENT.

From spinal process of occipital bone to Individuality, $8\frac{1}{4}$
Concentrativeness to Comparison, - - 8
Hole of ear to occipital spine, - - - - $4\frac{1}{2}$
Do. to Individuality, - - - $5\frac{1}{4}$
Do. to Firmness, - - - - $6\frac{3}{8}$
Destructiveness to Destructiveness, - - 6
Secretiveness to Secretiveness, - - - $6\frac{1}{8}$
Cautiousness to Cautiousness, - - - 6
Ideality to Ideality, - - - - - $4\frac{1}{2}$
Constructiveness to Constructiveness, - $5\frac{1}{2}$
Philoprogenitiveness to Individuality, - - $8\frac{3}{8}$
Anterior lobe of the brain, rather large.
Portion of brain above Cautiousness, moderate.
Do. above Causality, moderate.

DEVELOPMENT.

Amativeness, large, - - - - - 19
Philoprogenitiveness, very large, - - 20
Concentrativeness, large, - - - - 19
Adhesiveness, large, - - - - 18
Combativeness, large, - - - - 18
Destructiveness, large, - - - - 18
Secretiveness, large, - - - - - 19
Acquisitiveness, large, - - - - 19
Constructiveness, full, - - - - 14
Self-Esteem, very large, - - - - 20
Love of Approbation, rather large, - - 16
Cautiousness, rather large, - - - 16
Benevolence, moderate, - - - - 10
Veneration, full, - - - - - 14
Firmness, large, - - - - - - 19
Conscientiousness, moderate, - - - 10
Hope, full, - - - - - - 14
Wonder, full, - - - - - - 14
Ideality, rather full, - - - - - 12
Wit, rather full, - - - - - 12
Imitation, full, - - - - - - 15
Individuality, large, - - - - - 18
Form, rather large, - - - - - 16
Size, full, - - - - - - 14
Weight, moderate, - - - - - 11
Coloring, small, - - - - - - 7
Locality, rather large, - - - - - 17

Number, rather small,	8
Order, rather small,	6
Eventuality, rather large,	17
Time, rather large,	16
Tune, rather full,	13
Language, moderate,	10
Comparison full,	14
Causality, full,	14

INFERENCES.

Mr ——— says he knows this individual well. I fear that if he has had much to do with him, he knows him *too well*. His enormous head must give him great *power of character*, and I wish I could say that that power is all in the direction of good. Without education, and, of course, in inferior society, I could not answer for this individual not running headlong into the coarsest vicious indulgences. The *animal* endowment is excessive; and although the *intellectual* is very considerable, the *moral* is sadly deficient. The Amativeness is very great, and it is scarcely to be expected that it has been restrained from coarse and selfish indulgence. The individual may have married, and may have continued in the state, as well as entered into it, and loved wife and children, (the latter passionately;) but he would usually be a harsh and tyrannical head of a family. He is loud, domineering, and assuming, and probably abusive and imprecatory. He is deficient in kindness and mildness. His haughty and assuming character will likewise mark him out of doors; and his pride, obstinacy, opinionativeness, touchiness, resentfulness, and violence, must have involved him in many a quarrel and brawl. He must be tremendous when drunk. He has a *prodigious* conceit of himself; and although he is not indifferent to the *praise* of others (which, however, he seldom gets,) he snaps his fingers at the opinion of others when *against* him. His character is intensely selfish. There is much *savoir faire*, amounting even to cunning and hypocrisy. He is proud of being thought *deep*, studies the weak side of those with whom he deals, drives a hard and *knowing* bargain, gives truth to the winds, and glories in taking his merchant at disadvantage. He loves money, and grasps it so hard that it is difficult to get it out of his clutches for his just debts. His perceptions of justice are so feeble, that he will consider justice, if directed *against* himself, as injustice, and even injury. His money will all go for his own animal indulgences, even to the neglect of his family, when he is pinched. Charity or benevolence never drew sixpence from him. If he can both enjoy sensuality and hoard money, he will do both. He possesses very considerable intellectual powers, which will be directed steadily in

the service of his propensities and selfishness. If he has failed to make money in a coarse and plentiful way, it must proceed *from his deficient Conscientiousness affecting his credit.* His intellectual manifestations are coarse and inelegant, but they have considerable vigor. He is shrewd, observing, remembering, and sagacious, with a great power of *concentrative application of mind to his purpose.* He might succeed as a draughtsman or surveyor, but does not seem to have any *mechanical genius* about him. He is probably an indifferent workman with his hands, *except in fighting.* His head is his implement. I should expect to find him unpunctual, disorderly, slovenly, and dirty. He would have figured as a warrior or *marauder* in barbarous times ; *force is his engine,* and he possesses great power of character to wield it. He is not insensible to religious impressions, if they were ever pressed home upon him ; but his religion will be abject and selfish, and any thing but the practical morality of Christianity.

This individual could not match shades of color.

P. S.—On reflecting on the foregoing character, it has occurred that, although all that has been said is IN the man's nature, his *Secretiveness* and *Intellect* directing his own *interest,* may have prevented so broad a manifestation of it as to be *generally* recognised ; or by any but those who have seen him long, closely, and intimately. J. S.

AN account of the individual was subsequently drawn up by the gentleman who had sent the cast. It is as follows :—

Character of the uneducated man, deduced from a long and intimate knowledge of the individual.

I have had many opportunities of knowing well the character of this individual, which I have made a point of studying minutely, both as a matter of curiosity, and as an interesting subject of philosophical speculation. He is a native of Wales, and thirty-two years of age ; he stands six feet high, and is very strongly made. I am not well versed in the doctrine of temperaments ; but if there be such a temperament as the *sanguineo-melancholic,* I should say it is his. Though perfectly illiterate, and ignorant upon almost every subject, there is something about the man which makes it impossible for any body to despise him. Taken individually, all his qualifications are despicable, yet, considered in the aggregate, they are of that character which renders it difficult to view him contemptuously. His temper is decidedly bad ; it is not merely quick, but obdurate and sour ; and if he once conceives a dislike to any one, it is almost impossible to remove it. He is extremely

jealous, pettish, and suspicious, and cannot tolerate quizzery of any description. At the same time, althought on some points it is not difficult to play upon him, yet he has such an immense opinion of his own penetration, that he conceives no man could attempt such a step without being instantly detected. Any opinion which he may form he views as infallable, and all the evidence in existence will not make him abandon it. I have no doubt whatever, from what I have seen and known, that he is tyrannical and domineering. He is also very quarrelsome, so much so that it is disagreeable to walk on the streets with him, lest he gets involved in a scrape. He has no idea of accomodating himself to others, but goes doggedly along, pushing aside those who are not exactly disposed to get out of his way. He is a capital pugilist. The science of boxing he has studied indefatigably,—not, as it occurs to me, as an exercise, but to render himself formidable. The consequence is, that he has got into fifty *rows;* and if, at any time, you meet him, the chances are that his eyes are either in mourning from blows received, or his knuckles injured from the punishment given to his antagonist. His habits are altogether of a low order. He has no fondness for, but rather an aversion to, elegant and virtuous female society; and his associates are mostly prize-fighters, and sporting characters generally. With regard to his amative propensity, every body acquainted with him knows that it is very great; he is, in fact, the slave of that feeling, and never speaks of a woman except in an animal point of view. I think I may safely say that I never knew a person so perfectly indifferent to poetry, painting, fine scenery, and every thing beautiful in the material world. It is certain that the Cowgate, or Wapping, would excite about as much of the sublime in his mind as Glencoe, or the Vale of Chamouni. If people in his company begin to speak of such subjects and show any rapture, he gets gloomy and irritated, pronounces the conversation "d———d stuff," and, unless it be abandoned he leaves the room. On the contrary, get upon fighting, and, like the war-horse, his eye instantly lightens up—he becomes the cock of the company, and describes, with intense delight, the many brawls he has been in,—shows how he pounded this man and that man, and exemplifies, in the most graphic manner imaginable, all the different details of a fight. Indeed, his stories on such subjects are master-pieces in their way. They abound in details,—are astonishingly circumstantial; and if he tells the story fifty times, it never varies. I have no doubt whatever, that many of his alleged exploits are mere lies; but they are certainly the best put-together ones I ever listened to, and look prodigiously like truth. In fact, their excessive circumstantiality and detail, and the unvarying way in which he tells them

long imposed upon me, and convinced me that, in spite of their improbability, they must be true, till I ascertained from unquestionable evidence that some of them, at least, were merely ingenious fabrications, got up for the purpose of aggrandizing himself.

He is very fond of praise, especially of his person, which he considers faultless. This, indeed, is the only vulnerable point about him, and if the thing is done judiciously, he will swallow a most enormous dose; but if he once supposes they are quizzing him, it will require no small restraint to prevent him from inflicting summary punishment on the quizzer. His great ambition is to be a first rate boxer, or possess great strength; and so strong is the feeling, that if the choice were given him of being able to write Paradise Lost, or beat Jem Ward, there is no doubt he would fix upon the latter. Literature and literary men he views with great contempt. He says, that if he had received a proper education, and possessed the same advantages as other people, he could have written as good works as any man that ever lived. With all this he has no love whatever for reading. Indeed, he confesses—I sincerely believe for the purpose of making his natural genius appear more extraordinary—that he never read a volume in all his life; a fact which I perfectly credit. The only reading he ever indulges in, is the account of the prize-fights in Bell's Life in London.

One strong feature in his character is a total want of punctuality. When he makes an appointment it is the merest chance in the world if he keeps it. Indeed, he does not seem to think there is the slightest impropriety in violating such engagements. He is also slovenly in his dress, and altogether what you would call a careless, reckless sort of being.

So far as I know the man, I should say that his character is greatly deficient in philanthropy. He is disposed to take harsh views of things, and judge people's actions uncharitably. When offended at any one, he is also prone to curse at him and abuse him without mercy. Indeed, the whole texture of his mind is singularly inelegant; and I do not believe, that under any system of education, it would be possible to have made him, in manners or conversation, a suitable companion for well bred people.

With regard to his conscientiousness, I really am at loss what to say. For the first six years of my acquaintance with him, I considered him the most simple-minded and honest of human beings, and for any thing I can prove to the contrary, I might consider him so still; but I must say candidly, that some reports got into circulation against him in 1829, any thing but creditable to his honesty. He was accused (with what truth I know not) of having appropriated sums of money which did not

belong to him; and a stigma was attached to his character on this account, which I sincerely hope, and almost believe, is false, but which many persons affirm to be too true. This is all I can say. Be the matter as it may, it has done him great injury, and prevented him ever since from getting respectable employment.

I have spoken of his want of punctuality. This irregular propensity is manifested in the preference he gives to dining in chop-houses to doing so in his own house, and in his fondness for late hours. Indeed, he is exceedingly unsystematic, though both shrewd, observant, and sagacious. He seems, in an argument, to be quite incapable to proceeding upon general principles; and although he will never strike his own colors, he invariably mystifies and tires out his opponents.

He is ambitious of being thought formidable in drinking and eating. I have heard him boast before ladies, of the quantity of porter he could drink, and beef-steaks he could consume. He is exceedingly pleased when any one compliments him on his amative powers, and, in short, swallows with avidity whatever tends to exalt him in the scale of manhood. The only intellectual quality which he is vain of having imputed to him is his great *penetration*, and his talents for argument. He alleges, that were he better educated, he would be quite invincible at the latter accomplishment.

I think he has some mimicry about him, but it is all of the low kind. I have seen him *take off* some of his acquaintances pretty adroitly. He has also a fondness for vulgar jokes. For instance, I have seen him get hold of some half-cracked creature, and try how many pies he could eat—he himself laughing heartily, and enjoying the exhibition with great delight. I recollect of him getting a couple of fellows to try which of them would eat most rapidly a quantity of hot porridge, the winner to get five shillings for his performance. On another occasion he promised a carter two shillings if he would drink off half a gallon of small beer.

With regard to his love of money, I am at a loss what to say. Any time that I have seen him spend money, it always occurred to me as if it were done more out of pure spirit of ostentation than from liberality. Others have frequently made the same remark. I cannot bring myself to say that any particular fondness for the acquisition of wealth on his part ever occurred to me; but on this point I am not competent to speak. Of one thing, however, I am certain, that most of the money he lays out is expended in the bagnio, the chop-house, or among the pugilists. He spends little in clothing, and I believe never purchased a book in his lifetime.

I cannot speak of his religious feelings. I never saw any exhibited; but he has been most unfavorably situated for their

manifestation. If he once took it into his head to be religious, he would be such a saint as Louis XI. or Catherine of Medicis.

In short, he is a man who may be persuaded into a thing by flattery, but it is impossible to make him move a step by any other consideration. His obstinacy is very great, and proof against almost any thing. If he were in a station where he had plenty of scope and little restraint, I think he would be extremely tyrannical and fond of inflicting punishment. I have often heard him express great rage against Colonel Brereton for not sabring the people at Bristol, and swear that if he had had the command on that occasion, he would have slaughtered them by hundreds. This I believe firmly he would not scruple to do in such circumstances. If he took a fancy for a person, and that person did exactly as he wished, I think he would sacrifice life and limb to serve him; but the slightest symptom of the individual acting independently and thinking for himself, would make him cast him off. With regard to his love of children, I should think it considerable. At least children—with the exception of his three brothers to whom he is very much attached—are the only people towards whom I ever observed him to take a fancy. His letters are stiff, and indicate a deficient command of language; though in his capacity of a clerk he had plenty of experience in letter writing. His arithmetical powers are not great. I should think them below par. That he would be intensely litigious it is impossible to doubt. The expression of his face is sinister and gloomy, and indicates dogged determination, and great want of mental flexibility.

REMARKS BY MR SIMPSON ON THE PRECEDING ACCOUNT.

This character is substantially the same as that transmitted to ——. To the postscript of the latter it gives great value. In spite of six years' intimate acquaintance with and minute study of, this singular person, Mr —— did not know an important feature in his character—his deficient Conscientiousness, but had it only from reports. Yet he narrates several traits quite inconsistent with Conscientiousness, although he himself does not appear to know how they bear.

No. IV.

CASES OF SIMULTANEOUS CHANGE OF CHARACTER AND FORM OF HEAD.

(From the Phrenological Journal, Vol. viii. p. 373.)

Mr Deville, as is generally known, has collected several series of casts of the heads of the same individuals, taken at different periods of their lives; and he states that his observations have gone to prove that the form of the head is capable

of being changed by education and alteration of circumstances; and that the change takes place in the situation of those organs of which the sphere of activity is increased or diminished. The subject is important, and one which has not received all the attention which it deserves; and it is chiefly with the view of exciting phrenologists to make observations whenever opportunities may occur, that we subjoin a brief account of two cases, contained in a letter which we received last year from Mr Deville.

About four and a half years ago, Mr Deville took a cast of the head of a gentleman, then thirty two years old, and a second cast when he was at the age of thirty-six. For three or four years previously to taking the first cast, this gentleman was very fond of hoarding money, and his desire of accumulating had rendered him so penurious and unhappy, that, though his property was considerable, his friends were afraid of his becoming insane, from the sheer dread of being reduced to beggary. They endeavored to reason him out of his feeling, and sent him abroad with a gentleman, by whose attention and kindness he completely overcame the propensity, and made some progress in the study of the classics and of music. Mr Deville states, that upon measuring and comparing the two casts, he found the head to have considerably increased in size at the situation of the organs of Benevolence, Ideality, and the Reflecting Faculties. "I have," he adds, "two well anthenticated casts of a great artist, whose life is well known. The first is a mask taken in 1792, when he was about forty-five years of age; the other a cast of his head taken after death, in 1816. Now, it is well known that he became a hoarder and groveller after money during the last fifteen or twenty years of his life; nay, he became miserable from fear of coming to want, though he possessed extensive property, besides his pictures, which were of great value. Now, upon applying the callipers at Acquisitiveness, the second cast is found to be nearly four-eighths of an inch broader than that taken in 1792, while at the same time its height has diminished; it has become flatter at Benevolence and wider at Acquisitiveness. To some this may appear extraordinary, and had I known only a single instance I should have been silent; but as I have now between fifty and sixty cases of alteration of the form of the skull, accompanied by change of character, the subject assumes an important character, and calls to the extensive investigation."

We state these cases on the authority of Mr Deville, for the the purpose of calling attention to the subject; but we consider it to be attended with much difficulty. Analogy warrants us in believing, that while growth is still in progress, regular exercise of the mental organs will favor their development; and also

that long disuse at any period of life, will be accompanied with loss of size and vigor; but we do not know that analogy warrants us in expecting that, after full maturity is attained, exercise will not only strengthen mental organs, but cause them to enlarge their size by means of new and additional growth. Nature appears to set limits to the size of organs, both of mind and body, which no human means yet known can enlarge; a man naturally slender in bones and muscles may, by exercise, bring these parts into the best condition which their constitution will admit of; but we do not know any good authority for believing that he may render himself powerful and athletic by his own exertions. In like manner, the law of nature seems to be that a young lady, while still growing, may by exercising the organs of Time and Tune, for example, favor their development, and carry them to the highest point of perfection in size and activity which their inherent constitution will permit; but that she cannot cause them to increase indefinitely, otherwise we should see no examples of perseverance failing in its reward, which it unfortunately does, when exercised in opposition to nature. Experience, however, alone can determine.

No. V.

At page 122, I have quoted an extract from a paper by Mr Robert Cox, in the 9th volume of the Phrenological Journal. It is entitled "Observations on the Mutual Influence of the Mental Faculties," and contains some very luminous and novel views on the subject. From this interesting article I copy the following remarks:—

"Of all the causes which excite Destructiveness, the disagreeable activity of Self-Esteem is the most frequent and powerful; and, indeed, there are few occasions on which it does not partake in the suffering produced by offence of the other faculties. For 'contempt is that which putteth an edge upon anger, as much or more than the hurt itself; and, therefore, when men are ingenious in picking out circumstances of contempt, they do kindle their anger much.' Self-Esteem, when ill-regulated, makes individuals prefer themselves to every other person, and gives them a tendency to engross as much as possible the sources of happiness for their own peculiar advantage. Such men are therefore offended when they see other people either enjoying gratifications in which they have not the good fortune to partake—the mode of activity of Self-Esteem being in this case denominated *envy*, or grasping at what they themselves are desirous to obtain, whereby the emotion of *jealousy* is produced. The occasions which give birth to envy and jealousy, vary according to the faculties which happen to be, along with Self-Esteem, energetic. Thus, an unmarried lady, possessing

large organs of the domestic affections, combined with a great development of Self-Esteem, will be exceedingly apt to envy such of her acquaintenances as are happily married and surrounded by a promising and healthy family; while she will harbor jealousy towards any one who endeavors to secure the affections of the man whose love she desires for herself. A self-esteeming and acquisitive individual competing for a lucrative office, is jealous of his rival; and, after failing in the pursuit, regards him with envy. This pain of Self-Esteem renders him maliciously disposed towards the fortunate candidate; he bears a grudge against him, rejoices in his misfortunes, and lets slip no opportunity of blasting his reputation. In the case here supposed, there is added to envy the emotion of hatred, which is a compound of the painful emotion of Self-Esteem, or of some other faculty, with the propensity to injure or destroy."

"The weapons by which Love of Approbation is vulnerable, are slander, ridicule, and the expression of displeasure; and it is hardly necessary to say that these have a strong tendency to excite a desire to injure the person from whom they proceed. Disappointment of this feeling has a similar effect. A man who is quashed where he intends to make a splendid figure, seldom fails to bear a grudge against the person by whom he is annihilated. When both Self-Esteem and Love of Approbation are powerful—as they were in Bonaparte, for example—there is a desire not merely to be applauded and admired, but to be the grand and prominent object of applause and admiration—to walk, in short, 'the sole hero upon the stage' Such a man is therefore jealous of all whom he suspects of aiming at a share of the eclat, and envies and hates them when they get more than he. Robert Burns used to be grievously offended and irritated, when not made the *lion* of the company in which he was present. The noted case of David and Saul furnishes another good illustration. When the virgins, in celebrating their exploits, proclaimed that 'Saul had slain his thousands, and David his ten thousands,' the king, we are told, 'was very wroth, and the saying displeased him; and Saul eyed David from that day and forward.' An army which has been mortified and disgraced by defeat at the hands of an enemy before regarded with contempt, is apt to be extremely ferocious when at length a victory is gained. The conduct of the Duke of Cumberland's troops in the Highlands of Scotland, after the battle of Culloden, illustrates this remark. General Hawley, in particular, whose arrogance seems to have exceeded even his folly, was 'one of the most remorseless of all the commanding officers; apparently thinking no extent of cruelty a sufficient compensation for his loss of honor at Falkirk.'"

"It is curious, and to some may appear paradoxical, that even Benevolence can act as a direct stimulus to Destructiveness. Its disagreeable excitement occurs when we witness the infliction of pain, and is called pity or compassion. The benevolent man, whose Destructiveness is powerful, has, in such cases, a vivid inclination to bestow summary chastisement on the inflictor. This is well exemplified by the incident which gave occasion to the maledictory poem of Burns, written on seeing a wounded hare pass by, and in which are embodied, in nearly equal proportions, compassion for the hare, and curses on the man who had wounded it. So enraged was the poet, that he threatened to throw the sportsman into a neighboring river. In like manner, when a crime of great atrocity is perpetrated against any individual, the anger is not confined to the sufferer alone. 'There rises,' says Dr Brown, 'in the mind of others, an emotion, not so vivid perhaps, but of the same kind, involving the same instant dislike of the injurer, and followed by the same eager desire for punishment of the atrocious offence. In periods of revolutionary tumult, when the passions of a mob, and even, in many instances, their most virtuous passions, are the dreadful instruments of which the crafty avail themselves, how powerfully is this influence of indignation exemplified in the impetuosity of their vengeance! Indignation is then truly anger. The demagogue has only to circulate some tale of oppression; and each rushes almost instantly to the punishment of a crime, in which, though the injury had actually been committed he had no personal interest, but which is felt by each as a crime against himself.'"

"The offence which impiety, real or imagined, gives to Veneration, is not slow in calling Destructiveness into exercise." "The Crusades will readily occur to the reader as exhibiting a fearful ebullition of Destructiveness excited through the medium of Veneration."

No. VI.

CLASSIFICATION OF THE MENTAL FACULTIES ACCORDING TO SPURZHEIM.

ORDER I.—FEELINGS OR AFFECTIVE FACULTIES.

GENUS I.—PROPENSITIES.

† Vitativeness.
* Alimentiveness.
1 Destructiveness.
2 Amativeness.
3 Philoprogenitiveness.
4 Adhesiveness.
5 Inhabitativeness.
6 Combativeness.
7 Secretiveness.
8 Acquisitiveness.
9 Constructiveness.

GENUS II.—SENTIMENTS.

1. *Inferior sentiments common to man and the lower animals.*

10 Cautiousness.
11 Approbativeness.
12 Self-Esteem.

2. *Superior sentiment common to man and the lower animals.*

13 Benevolence.

3. *Superior sentiments proper to man.*

14 Reverence.
15 Firmness.
16 Conscientiousness.
17 Hope.
18 Marvelousness.
19 Ideality.
20 Mirthfulnesss.
21 Imitation.

ORDER II.—INTELLECTUAL FACULTIES.

GENUS I.—EXTERNAL SENSES.

Voluntary motion.
Feeling.
Taste.
Smell.
Hearing.
Sight.

GENUS II.—PERCEPTIVE FACULTIES.

1. *Intellectual faculties which perceive the existence of external objects and their physical qualities.*

22 Individuality.
23 Configuration.
24 Size.
25 Weight and Resistance.
26 Coloring.

2. *Intellectual faculties which perceive the relations of external objects.*

27 Locality.
28 Order.
29 Calculation.
30 Eventuality.
31 Time.
32 Tune.
33 Artificial Language.

GENUS III.—REFLECTIVE FACULTIES.

34 Comparison.
35 Causality.

THE SCHOOL LIBRARY.

MARSH, CAPEN, LYON, AND WEBB,

109, WASHINGTON STREET, BOSTON,

ARE NOW PUBLISHING, UNDER THE SANCTION OF THE MASSACHUSETTS BOARD OF EDUCATION, A COLLECTION OF ORIGINAL AND SELECTED WORKS, ENTITLED, 'THE SCHOOL LIBRARY.'

The LIBRARY will embrace two series of fifty volumes each; the one to be in 18mo., averaging from 250 to 280 pages per volume; the other in 12mo., each volume containing from 350 to 400 pages. The former, or *Juvenile Series*, is intended for children of ten or twelve years of age and *under;* the latter for individuals of that age, and *upwards*,—in other words, for advanced scholars and their parents.

The LIBRARY is to consist of *reading*, and not *school, class*, or *text* books; the design being to furnish youth with suitable works for perusal during their leisure hours; works that will interest, as well as instruct them, and of such a character that they will turn to them with pleasure, when it is desirable to unbend from the studies of the school room.

The plan will embrace every department of Science and Literature, preference being given to works relating to our own Country, and illustrative of the history, institutions, manners, customs, &c., of our own people. Being intended for the *whole* community, no work of a sectarian or denominational character in religion, or of a partisan character in politics, will be admitted.

The aim will be to clothe the subjects discussed, in a popular garb, that they may prove so attractive, as to lure

the child onwards, fix his attention, and induce him, subsequently, to seek information from other and more recondite works, which, if put into his hands at the onset, would alarm him, and induce a disgust for that which would appear dry and unintelligible, and of course, uninteresting.

The intention is not to provide information for any one class, to the exclusion of others, but to disseminate knowledge among all classes. The Publishers wish the children of the Farmer, the Merchant, the Manufacturer, the Mechanic, the Laborer,—all to profit by the lights of science and literature, that they may be rendered the more virtuous and happy, and become more useful to themselves, to one another, to the community, and mankind at large. To accomplish this desirable end, the LIBRARY will embrace so wide a range of subjects, that every child may find something which will prove useful and profitable to him, whatever his situation, circumstances, or pursuits, in afterlife may be.

The project is one of great extent, and vast importance; and, if properly carried out, must become of inestimable value to the young. Whether the anticipations of the Publishers, with regard to it, will be verified, time must determine ; but from the intellectual and moral, theoretical and practical character of those who have engaged to aid in the undertaking, they have good grounds for presuming that much will be accomplished, and that by their united efforts many obstacles, now existing to the mental, moral, and physical improvement of youth, will be removed, or at least be rendered more easily surmountable.

Among the individuals already engaged as writers for one or both Series, may be mentioned—the Hon. Judge Story, Jared Sparks, Esq., Washington Irving, Esq., Rev. Dr. Wayland, Professor Benjamin Silliman, Professor Dennison Olmsted, Professor Alonzo Potter, Hon. Judge Buel, Dr. Jacob Bigelow, Dr. Robley Dunglison, Dr. Elisha Bartlett, Rev. Charles W. Upham, Rev. F. W. P. Greenwood, Rev. Royal Robbins, Rev. Warren Burton, Arthur J. Stansbury, Esq., E. C. Wines, Esq., Robert Rantoul, Jr., Esq., Professor Tucker, and Professor Elton.

Mrs. Sarah J. Hale, Mrs. E. F. Ellet, Mrs. Emma C. Embury, Mrs. A. H Lincoln Phelps, Miss E. Robbins,

Miss E. P. Peabody, Miss Mary E. Lee, Miss Caroline Sedgwick.

No work will be admitted into the LIBRARY, unless it be approved by every member of the Board of Education; which Board consists of the following individuals, viz., His Excellency Edward Everett, Chairman, His Honor George Hull, Rev. Emerson Davis, Edmund Dwight, Esq., Rev. George Putnam, Robert Rantoul, Jr., Esq., Rev. Thomas Robbins, D. D., Jared Sparks, Esq., Hon. Charles Hudson, and Hon. George N. Briggs.

The following works, have been printed, and constitute the first ten volumes of the 12mo. series, viz.

LIFE OF COLUMBUS, by WASHINGTON IRVING, a new edition, (revised by the author,) including a Visit to Palos, and other additions, a portrait of the Great Navigator, a Map, and several illustrative engravings.

PALEY'S NATURAL THEOLOGY, in two volumes, with selections from the Dissertations and Notes of LORD BROUGHAM and SIR CHARLES BELL, illustrated by numerous wood cuts, and prefaced by a Life of the Author; (with a portrait;) the whole being newly arranged and adapted for The School Library, by ELISHA BARTLETT, M. D., *Professor of the Theory and Practice of Physic and Pathological Anatomy in Dartmouth College.*

LIVES OF EMINENT INDIVIDUALS, CELEBRATED IN AMERICAN HISTORY, in three vols., with portraits of Robert Fulton, Sebastian Cabot, and Sir Henry Vane, and autographs of most of the individuals.

VOL. I. WILL CONTAIN

Life of MAJOR-GENERAL JOHN STARK, by His Excellency Edward Everett.
" DAVID BRAINERD, by Rev. William B. O. Peabody.
" ROBERT FULTON, by James Renwick, LL. D., *Professor of Natural Philosophy and Chemistry, in Columbia College, New York City.*
" CAPTAIN JOHN SMITH, by George S. Hillard, Esq.

VOL. II. WILL CONTAIN

Life of MAJOR-GENERAL ETHAN ALLEN, by Jared Sparks, *Professor of History in Harvard University.*
" SEBASTIAN CABOT, by Charles Hayward, Jr., Esq.
" HENRY HUDSON, by Henry R. Cleveland, Esq.
" MAJOR-GENERAL JOSEPH WARREN, by Alexander H. Everett, LL. D.
" MAJOR-GENERAL ISRAEL PUTNAM, by O. W. B. Peabody, Esq.
" DAVID RITTENHOUSE, by Professor James Renwick, LL. D.

VOL. III. WILL CONTAIN

Life of WILLIAM PINKNEY, by Henry Wheaton, LL. D., *Author of History of the Northmen.*
" SIR HENRY VANE, by Rev. Charles W. Upham.
" MAJOR-GENERAL ANTHONY WAYNE, by John Armstrong, Esq.
" WILLIAM ELLERY, by Edward T. Channing, Esq.
" MAJOR-GENERAL RICHARD MONTGOMERY, by John Armstrong, Esq.

THE SACRED PHILOSOPHY OF THE SEASONS,

illustrating The Perfections of God in the Phenomena of the Year. In 4 vols. By the Rev. HENRY DUNCAN, D. D., of *Ruthwell, Scotland;* with important additions, and some modifications to adapt it to American readers, by the Rev. F. W. P. GREENWOOD, of Boston.

The great value and interesting nature of these volumes, to every class of individuals, will be seen, at once, by a perusal of the following Table of Contents. The work contains a paper for every day in the year.

VOL. I.—WINTER.

I. SUNDAY.—*Goodness of God to his Rational Creatures.* The Character impressed on Nature—Compensation. Contrivance.

COSMICAL ARRANGEMENTS.

Globular Figure of the Earth. Circulation in the Atmosphere and Ocean. The Atmosphere. Ignis Fatuus. II. SUNDAY.—*General Aspect of Winter.* Phosphorescence. Aurora Borealis. Meteoric Showers. Variety of Climates. Practical Effect of the Commercial Spirit produced by a Variety of Climates. Adaptation of Organized Existences to Seasons and Climates. III. SUNDAY.—*The Omnipresence of God.* Adaptation of Organized Existences to the Tropical Regions. Adaptation of Organized Existences to Temperate and Polar Climates. The Balance Preserved in the Animal and Vegetable Creation. Night.—Its Alternation with Day. Sleep. Dreaming. IV. SUNDAY.—*The World a State of Discipline.*

THE STARRY HEAVENS.

General Remarks. Gravitation and Inertia. The Planetary System. The Sun as the Source of Light and Heat. Motions of the Planets. Resisting Medium. V. SUNDAY.—*Divine and Human Knowledge compared.* The Satellites. Relative Proportions of the Planetary System. Distance of the Fixed Stars. Immensity of the Universe. Nebulæ. Binary Stars.

THE MICROSCOPE.

VI. SUNDAY.—*Discoveries of the Telescope and Microscope compared.* Wonders of the Microscope.—Infusory Animalcules.

HYBERNATION OF PLANTS.

Plants and Animals compared. Adjustment of the Constitution of Plants to the Annual Cycle. Physiological Condition of Plants during Winter.

HYBERNATION OF INSECTS.

Instinct. VII. SUNDAY.—*On Seeing God in his Works.* Reason in the Lower Animals. Eggs. Various States. Bees. The Snail. The Beetle. VIII. SUNDAY.—*Greatness of God even in the Smallest Things.*

MIGRATIONS OF BIRDS AND QUADRUPEDS DURING WINTER.

Birds. Birds which partially migrate. Quadrupeds.

CHRISTMAS-DAY. NO SEASON UNPLEASANT TO THE CHEERFUL MIND. IX. SUNDAY.—*Proofs of Divine Benevolence in the Works of Creation.*

MIGRATION OF FISHES.

The Sturgeon, the Herring, the Cod, &c. Cetaceous Animals. Migration from the Sea into Rivers. Migration of Eels.

NEW-YEAR'S-DAY.

Migration of the Land-Crab. X. SUNDAY.—*Winter an Emblem of Death.*

HYBERNATION OF QUADRUPEDS.

Clothing. Storing Instincts. Torpidity.

HYBERNATION OF MAN.

Privation stimulates his Faculties. Provisions for his Comfort. Adaptation of his Constitution to the Season. XI. SUNDAY.—*The Unceasing and Universal Providence of God.*

INHABITANTS OF THE POLAR REGIONS.

The Esquimaux. Food and Clothing. Dwellings and Fire.

FROST.

Provision for causing Ice to Float on the Surface. The Expansive and Non-conducting Power of Ice. Amusements connected with it. XII. SUNDAY.—*Winter not Monotonous.—Boundless Variety of Nature.* Effects of Frost in the Northern Regions. Agency of Frost in Mountainous Regions. Hoar Frost.—Foliations on Window-Glass, &c. Beneficent Contrivances relative to Snow. Sagacity and Fidelity of the Dog in Snow.

GEOLOGY.

Its Phenomena consistent with the Mosaic Account of the Creation. XIII. SUNDAY.—*The Difficulty of Comprehending the Operations of Providence.* Successive Periods of Deposit. Successive Periods of Organized Existences. State of the Antediluvian World. Indications of the Action of the Deluge at the Period assigned to it in Scripture. Cuvier's Calculation respecting the Deluge. Effects of the Deluge on the Present Surface of the Earth. XIV. SUNDAY.—*The Deluge a Divine Judgement.*

VOL. II.—SPRING.

COSMICAL ARRANGEMENTS.

General Character of Spring in temperate Climates. Increasing Temperature of the Weather, and its Effects. Color and Figure of Bodies. Mountains. Rain. Springs. I. SUNDAY.—*Advantages of Vicissitude.* Rivers.

REPRODUCTION OF VEGETABLES.

Vegetable Soil. Vegetation. Preservation and Distribution of Seeds. Long Vitality of Seeds. Developement of Seeds and Plants. II. SUNDAY.—*Analogy of Nature.* The Vital Powers of Plants. Flowers.—Their Form, Color, and Fragrance. Their Organs of Reproduction, and their Secretion of Honey. The Violet.

REPRODUCTION OF ANIMALS.

The Animal Structure.—Cellular Texture—Membranes, Tendons, and Ligaments. Secretion, Digestion, and the Circulation of the Blood. III. SUNDAY.—"*The Same Lord over All.*" The Animal Structure. Gastric Juice. Muscular Power. Nature of the Proof of Creative Wisdom derived from the Animal Frame. The Lower Orders of Animals. The Higher Orders of Animals.

INSTINCTS CONNECTED WITH THE REPRODUCTION OF ANIMALS.

General Remarks. Parental Affection. Insects.—Their Eggs. IV. SUNDAY.—*On the Uniformity or Sameness in the Natural and Moral World.* Insects.—Care of their Offspring, exemplified in Bees and Wasps. The Moth. The Burying-Beetle. The Ant. Gall Flies. Deposition of Eggs in the Bodies of Animals, and in Insects' Nests. Birds.—Their Eggs. Prospective Contrivances. V. SUNDAY.—*On the Domestic Affections.* Birds.—Relation of their Bodies to external Nature. Pairing. Nest-building. The Grossbeak. The Humming-bird. VI. SUNDAY.—*Regeneration.* Birds.—Nests of Swallows. Hatching of Eggs, and rearing the Brood. Quadrupeds.—The Lion. The Rabbit. Instincts of the Young.

Man.—Effects of protracted Childhood on the Individual. Effects of protracted Childhood on the Parents and on Society. VII. SUNDAY.—*On Christian Love.*

AGRICULTURE.

The Difference between the Operations of Reason and Instinct, as affording Arguments in Favor of the Divine Perfections. Origin of Agricultural Labor. Origin of Property in the Soil, and the Division of Ranks. Effects of Property in the Soil. Benefits derived from the Principles which Stimulate Agricultural Improvement. The Blessings of Labor. VIII. SUNDAY.—*Spiritual Training by Affliction.* Nature of Soils. Formation of Soils. Management of Soils.—Draining. Irrigation. Blair-Drummond Moss. Products of the Soil.—Dissemination of Plants. IX. SUNDAY.—*The Sower.* Dissemination of Plants.—The Cocoa-Nut Tree. Mitigation of Seasons occasioned by Cultivation. The Labors of the Husbandman wisely distributed over the Year. The Corn Plants.—Their Mysterious Origin. Their Distribution over the Globe. Wheat. X. SUNDAY.—*Sabbath Morning.* The Corn-Plants.—Barley, Oats, Rice, Maize, and Millet. Leguminous Plants.—Peas and Beans. Esculent Roots.—The Potato. Vegetable Substances used for Weaving. The Flax Plant. XI. SUNDAY.—*True Science the Handmaid of Religion.* Vegetable Substances used for Weaving. The Cotton Plant. Vegetable Substances used for Cordage.—Hemp. Vegetable Substances used for Paper.

ANNIVERSARY OF THE DEATH AND RESURRECTION OF CHRIST.

The Sacrament of the Supper. The Crucifixion. The Grave. XII. SUNDAY.—*The Resurrection.*

ENJOYMENT EQUALLY DISTRIBUTED. THE ENJOYMENTS OF THE POOR IN SPRING. THE WOODS.

RETROSPECTIVE VIEW OF THE ARGUMENT.

The Power and Intelligence of the Creator. The Goodness of the Creator. The Use and Deficiency of Natural Religion.

VOL. III.—SUMMER.

COSMICAL ARRANGEMENTS.

I. SUNDAY.—*Summer the Perfection of the Year.* Increased Heat. Internal Heat of the Earth. Increased Light. Electricity. Clouds. Dew. II. SUNDAY.—*Scriptural Allusions to the Dew.* Adaptations of the Faculties of Living Beings to the Properties of Light and Air.

VEGETABLES.

Growth of Vegetables. Principles on which Horticulture is founded. History of Horticulture. The Turnip. Brassica or Cabbage. III. SUNDAY.—*Spiritual Light.* Various Garden Vegetables. Flowers—The Rose. Fruits. Ingrafting. The Gooseberry and Currant. The Orchard. IV. SUNDAY.—*Spiritual Soil.* Productions of Warm Climates used for Human Food.—The Banana. The Date Palm. Trees used for other Purposes than Food. Vegetable Substances used in Tanning. Vegetable Fixed Oils. Vegetable Oils—Essential and Empyreumatic. Vegetable Tallow and Wax. V. SUNDAY.—*Spiritual Culture.* Vegetable Life in the Polar Regions.

ANIMALS.

Connexion between the Vegetable and Animal Kingdoms. The Sensorial Organs. Sensation and Perception. The Argonaut and Nautilus. The Coral Insect. VI. SUNDAY.—*The Invisible Architect.* Insect Transformations—Cocoons—The Silk-Worm. Insects—Their Larva State. Their Pupa or Chrysalis State. Their Imago or Perfect State. The Building Spider. Spider's Webb. VII. SUNDAY.—*Spiritual Transformation.* Insects—Legionary and Sanguine Ants. The Lion Ant—The Queen-Bee. Physiological Character of Vertebrated Animals. Reptiles—The Tortoise—The Serpent. VIII. SUNDAY.—*The Old Serpent.* Reptiles—The Saurian Tribes. Birds—Their Relative Position. The Bill. Their Power of Flying. Their Power of Vision. Their Voice. Their Selection of Food. IX. SUNDAY.—*The Ascension of Christ.* Birds—Their Gregarious Habits. Domestic Fowls—The Cock, the Turkey, and the Peacock. The Goose and the Duck. Birds of Prey—The Vulture. The Eagle. Predaceous Animals—Their

Offices in Nature. X. SUNDAY.—*Christ the Judge of the World.* Quadrupeds—Their Characteristics. Their Bodily Organs. The Bat. The Mouse. Ruminating—The Goat and Sheep. Sheep Shearing. XI. SUNDAY.—*Christ, the Good Shepherd.* Quadrupeds—The Shepherd's Dog. Ruminating—The Cow. Thick-skinned—The Hog. The Horse and Ass. The Elephant. Reflections on the Domestic Animals. XII. SUNDAY.—*The Destruction of the World, and the Renovation of the Human Frame in a Future State.* Fishes. Man—His External Structure. His Intellectual Powers. His Moral Powers. Physical Effects of Climate. Moral Effects of Climate. XIII. SUNDAY.—*The Confusion of Tongues.* Man—Human Language.

HAYMAKING—PLEASURES OF RURAL SCENERY.

THE VARIETY, BEAUTY, AND UTILITY OF ORGANIZED EXISTENCES.

RETROSPECTIVE VIEW OF THE ARGUMENT.

Adaptation. Future Existence. Discipline.

XIV. SUNDAY.—*The Day of Pentecost—One Language.*

VOL. IV.—AUTUMN.

PHENOMENA, PRODUCE, AND LABORS OF THE SEASON.

General Character of Autumn. Autumn in the City. Famine in the beginning of Autumn. Autumnal Vegetation. Progress of Vegetation in the Corn Plants. Harvest. I. SUNDAY. *Stability of Nature.* Gleaning. The Harvest Moon. Harvest-Home. Storing of Corn. Birds.—Their State in Autumn.

THE WOODS.

Their Autumnal Appearance. II. SUNDAY.—*The Powers of the World to come.* The Woods. Their Uses. Various Kinds and Adaptations of Timber.

ORIGIN OF THE ARTS.—Food, Clothing, and Shelter.

HUMAN FOOD.

Its Principle. The Moral Operation of the Principle. Its Supply not inadequate. III. SUNDAY.—*Christians "Members one of another."* Provision for the future.—Soil still uncultivated. Improved Cultivation. Means now in Existence. Vegetable and Animal Food. Fruits—Their Qualities. Drink. IV. SUNDAY.—"*The Bread of Life.*" Milk. Wine. Tea and Coffee. Sugar. The Pleasures connected with Food. Comparison between the Food of Savage and Civilized Man. V. SUNDAY.—"*Give us this Day our daily Bread.*" Agriculture of the Greeks.—Their Harvest. Agriculture of the Romans. Their Harvest. Progress of British Agriculture. Modern Continental Agriculture.

HUMAN CLOTHING.

Its Principle. Its Primitive State. VI. SUNDAY.—*The Emptiness of Human Attainments.* Its Ancient History. Commercial History of the Raw Material. The Silk Manufacture.—Its Modern History. History of Mechanical Contrivances connected with it. Rearing of the Cocoons, &c. The Cotton Manufacture.—Its Foreign History. VII. SUNDAY.—*The Intellectual and Moral Enjoyments of Heaven.* The Cotton Manufacture.—Its British History. Improvement of Machinery. Its American History.—Introduction of Steam Power. The Woollen Manufacture.—Its History. The Art of Bleaching. The Art of Dyeing.—Its Origin and Ancient History. VIII. SUNDAY.—*The Social and Religious Enjoyments of Heaven.* The Art of Dyeing.—Its Modern History. Its Chemical Principles.

ARCHITECTURE.

Its Principle. Its original State.—Materials employed. Tools employed. Its Modifications by the Influence of Habit and Religion. IX. SUNDAY.—*The Children of the World wiser than the Children of Light.* Architecture.—Ancient History and Practice.—Egypt.—Thebes. The Pyramids. India.—Excavated Temples. Central Asia.—Tower of Babel, or Temple of Belus. Babylon. Nineveh. Petra. Greece. X. SUNDAY.—*Divine Strength made perfect in Human Weakness.* Rome. The Gothic Style. Britain. Bridges. Aqueducts. Railways. XI. SUNDAY.—*An Autumnal Sabbath Evening.* Prospective Improvement of Locomotive Power. Lighthouses—The Eddystone Lighthouse. The Thames Tunnel.

CLOSE OF AUTUMN.

Miscellaneous Reflections on Autumnal Appearances. The Landscape at the Close of Autumn. XII. SUNDAY.—*The Fall of the Leaf.*

GENERAL SUMMARY OF THE ARGUMENT.

Government of the World by General Laws. Government of the World by a Particular Providence. Contrast between Savage and Civilized Life, as regards the Arts. As regards Domestic Comforts. As regards Commerce. As regards Moral Cultivation. XIII. SUNDAY.—"*The Harvest is the End of the World.*"

The preceding ten volumes are now ready for delivery;—and they will be followed, with all due despatch, by the subjoined, among others, provided they are approved by the Board of Education.

LIFE OF WASHINGTON, (with a portrait, and numerous engravings,) by the Rev. CHARLES W. UPHAM, *Author of 'the Life of Sir Henry Vane.'*

THE PURSUIT OF KNOWLEDGE UNDER DIFFICULTIES; in two volumes, with Preface and Notes, by FRANCIS WAYLAND, D. D., *President of Brown University.*

THE PURSUIT OF KNOWLEDGE UNDER DIFFICULTIES, illustrated by incidents in the Lives of AMERICAN INDIVIDUALS; in one volume, with Portraits.

HUMAN PHYSIOLOGY, in two volumes, with illustrative wood cuts, by ROBLEY DUNGLISON, M. D., *Professor of the Institutes of Medicine in the Jefferson Medical College, Philadelphia; Author of 'Elements of Hygiene,' 'The Medical Student,' 'Principles of Medical Practice,' &c. &c.*

CHEMISTRY, with illustrative wood cuts, by BENJAMIN SILLIMAN, M. D., L L. D., *Professor of Chemistry, Mineralogy, &c. in Yale College.*

ASTRONOMY, by DENNISON OLMSTED, *Professor of Natural Philosophy and Astronomy in Yale College.*

This work will be a popular treatise on the Science; it will also enter fully into its history, and consider the subject of Natural Theology, so far as it is related to Astronomy.

NATURAL PHILOSOPHY, by PROFESSOR OLMSTED.

Both of these works will be very fully illustrated by diagrams and wood engravings.

THE USEFUL ARTS, considered in connexion with the Applications of Science; in two volumes, with many cuts, by JACOB BIGELOW, M. D., *Professor of Materia Medica in Harvard University, Author of 'the Elements of Technology,' &c. &c.*

We subjoin a summary of the Topics discussed in the several chapters of this Important Work, that its nature and objects may be the more clearly understood.

CHAPTER I.

Outline of the History of the Arts in Ancient and Modern Times.

Arts of the Egyptians, Assyrians, Jews, Hindoos, Chinese, Greeks, Romans, Dark Ages, Modern Times, Nineteenth Century.

CHAPTER II.

Of the Materials used in the Arts.

Materials from the Mineral Kingdom—Stones and Earths—Marble, Granite, Sienite, Freestone, Slate, Soapstone, Serpentine, Gypsum, Alabaster, Chalk, Fluor Spar, Flint, Porphyry, Buhrstone, Novaculite, Precious Stones, Emery, Lead, Pumice, Tufa, Peperino, Tripoli, Clay, Asbestus, Cements, Limestone, Puzzolana, Tarras. *Other Cements*—Maltha. *Metals*—Iron, Copper, Lead, Tin, Mercury, Gold, Silver, Platina, Zinc, Antimony, Bismuth, Arsenic, Manganese, Nickel. *Combustibles*, &c—Bitumen, Amber, Coal, Anthracite, Graphite, Peat, Sulphur. *Materials from the Vegetable Kingdom*—Wood, Bark, Oak, Hickory, Ash, Elm, Locust, Wild Cherry, Chestnut, Beech, Basswood, Tulip Tree, Maple, Birch, Button Wood, Persimmon, Black Walnut, Tupelo, Pine, Spruce, Hemlock, White Cedar, Cypress, Larch, Arbor Vitæ, Red Cedar, Willow, Mahogany, Boxwood, Lignum Vitæ, Cork, Hemp, Flax, Cotton, Turpentine, Caoutchouc, Oils, Resins, Starch, Gum. *Materials from the Animal Kingdom*—Skins, Hair, and Fur, Quills and Feathers, Wool, Silk, Bone and Ivory, Horn, Tortoise Shell, Whale Bone, Glue, Oil, Wax, Phosphorus. *Materials used in Painting, Dyeing, and Varnishing.*

CHAPTER III.

Of the Form and Strength of Materials.

Modes of Estimation, Stress and Strain, Resistance, Extension, Compression, Lateral Strain, Stiffness, Tubes, Strength, Place of Strain, Incipient Fracture, Shape of Timber, Torsion, Limit of Bulk, Practical Remarks.

CHAPTER IV.

The Preservation of Materials.

Stones, Metals, Organic Substances, Temperature, Dryness, Wetness, Antiseptics. Timber—Felling, Seasoning. Preservation of Timber.—Preservation of Animal Texture—Embalming, Tanning, Parchment, Catgut, Gold Beater's Skin. Specimens in Natural History—Appert's Process.

CHAPTER V.

Of Dividing and Uniting Materials.

Cohesion. *Modes of Division*—Fracture, Cutting Machines, Penetration, Boring and Drilling, Turning, Attrition, Sawing, Saw Mill, Circular Saw, Crushing, Stamping Mill, Bark Mill, Oil Mill, Sugar Mill, Cider Mill, Grinding, Grist Mill, Color Mill. *Modes of Union*—Insertion, Interposition, Binding, Locking, Cementing, Glueing, Welding, Soldering, Casting, Fluxes, Moulds.

CHAPTER VI.

Of Changing the Color of Materials.

Of Applying Superficial Color—Painting, Colors, Preparation, Application, Crayons, Water Colors, Distemper, Fresco, Encaustic Painting, Oil Painting, Varnishing, Japanning, Polishing, Lacquering, Gilding. *Of Changing Intrinsic Color*—Bleaching, Photogenic Drawing, Dyeing, Mordants, Dyes, Calico Printing.

CHAPTER VII.

The Arts of Writing and Printing.

Letters. Invention of Letters, Arrangement of Letters, Writing Materials, Papyrus, Herculaneum, Manuscripts, Parchment, Paper, Instruments, Ink, Copying Machines, Printing, Types, Cases, Sizes, Composing, Imposing, Signatures, Correcting the Press, Press Work, Printing Press, Stereotyping, Machine Printing. History.

CHAPTER VIII.

Arts of Designing and Painting.

Divisions, Perspective, Field of Vision, Distance and Foreshortening, Definitions, Plate II—Problems, Instrumental, Perspective, Mechanical Perspective, Perspectographs, Projections, Isometrical Perspective, Chiaro Oscuro, Light and Shade, Association, Direction of Light, Reflected Light, Expression of Shape. Eyes of a Portrait—Shadows, Aerial Perspective, Coloring, Colors, Shades, Tone, Harmony, Contrast. Remarks.

CHAPTER IX.

Arts of Engraving and Lithography.

Engraving, Origin, Materials, Instruments, Styles, Line, Engraving, Medal Ruling, Stippling, Etching, Mezzo-tinto, Aqua Tinta, Copperplate Printing, Colored Engravings, Steel Engraving, Wood Engraving. Lithography—Principles, Origin, Lithographic Stones, Preparation, Lithographic Ink and Chalk, Mode of Drawing, Etching the Stone, Printing, Printing Ink. Remarks.

CHAPTER X.

Of Sculpture, Modelling, and Casting.

Subjects—Modelling, Casting in Plaster, Bronze Casting, Practice of Sculpture, Materials, Objects of Sculpture, Gem Engraving, Cameos, Intaglios, Mosaic, Scagliola.

CHAPTER XI.

Of Architecture and Building.

Architecture—Elements, Foundations, Column, Wall, Lintel, Arch, Abutments, Arcade, Vault, Dome, Plate I, Roof, Styles of Building, Definitions, Measures, Drawings, Restorations, *Egyptian Style*, *The Chinese Style*, *The Grecian Style*, Orders of Architecture—Doric Order, Ionic Order, Corinthian Order, Caryatides, Grecian Temple, Grecian Theatre, Remarks, Plate IV, *Roman Style*, Tuscan Order, Roman Doric, Roman Ionic, Composite Order, Roman Structures, Remarks, Plate V, *Greco-Gothic Style*, *Saracenic Style*, *Gothic Style*, Definitions, Plate VI, Plate VII, Application.

CHAPTER XII.

Arts of Heating and Ventilation.

Production of Heat—Fuel, Weight of Fuel, Combustible Matter of Fuel, Water in Fuel, Charcoal, *Communication of Heat*, Radiated and Conducted Heat, Fire in the Open Air, Fire Places, Admission of Cold Air, Open Fires, Franklin Stove, Rumford Fire Place, Double Fire Place, Coal Grate, Anthracite Grate, Burns' Grate, Building a Fire, Furnaces, Stoves, Russian Stove, Cockle, Cellar Stoves, and Air Flues, Heating by Water, Heating by Steam, *Retention of Heat*, Causes of Loss, Crevices, Chimneys, Entries and Sky Lights, Windows, *Ventilation*, Objects, Modes, Ventilators, Culverts, Smoky Rooms, Damp Chimneys, Large Fire

Places, Close Rooms, Contiguous Doors, Short Chimneys, Opposite Fire Places, Neighboring Eminences, Turncap, &c., Contiguous Flues, Burning of Smoke.

CHAPTER XIII.

Arts of Illumination.

Flame—Support of Flame, Torches and Candles, Lamps, Reservoirs, Astral Lamp, Hydrostatic Lamps, Automaton Lamp, Mechanical Lamps, Fountain Lamp, Argand Lamp, Reflectors, Hanging of Pictures, Transparency of Flame, Glass Shades, Sinumbral Lamp, Measurement of Light, Gas Lights, Coal Gas, Oil Gas, Gasometer, Portable Gas Lights, Safety Lamp, Lamp without Flame, Modes of procuring Light.

CHAPTER XIV.

Arts of Locomotion.

Motion of Animals, Inertia, Aids to Locomotion, Wheel Cariages, Wheels, Rollers, Size of Wheels, Line of Traction, Broad Wheels, Form of Wheels, Axletrees, Springs, Attaching of Horses, Highways, Roads, Pavements, McAdam Roads, *Bridges*, 1, Wooden Bridges, 2, Stone Bridges, 3, Cast Iron Bridges, 4, Suspension Bridges, 5, Floating Bridges, *Rail Roads*, Edge Railway, Tram Road, Single Rail, Passings, Propelling Power, Locomotive Engines, *Canals*, Embankments, Aqueducts, Tunnels, Gates and Weirs, Locks, Boats, Size of Canals, *Sailing*, Form of a Ship, Keel and Rudder, Effect of the Wind, Stability of a Ship, Steam Boats, *Diving Bell*, Submarine Navigation, *Aerostation*, Balloon, Parachute.

CHAPTER XV.

Elements of Machinery.

Machines, Motion, *Rotary or Circular Motion*, Band Wheels, Rag Wheels, Toothed Wheels, Spiral Gear, Bevel Gear, Crown Wheel, Universal Joint, Perpetual Screw, Brush Wheels, Ratchet Wheel, Distant Rotary Motion, Change of Velocity, Fusee, *Alternate or Reciprocating Motion*, Cams, Crank, Parallel Motion, Sun and Planet Wheel, Inclined Wheel, Epicycloidal Wheel, Rack and Segment, Rack and Pinion, Belt and Segment, Scapements, *Continued Rectilinear Motion*, Band, Rack, Universal Lever, Screw, Change of Direction, Toggle Joint, *Of Engaging and Disengaging Machinery*, *Of Equalizing Motion*, Governor, Fly Wheel, *Friction*, Remarks.

CHAPTER XVI.

Of the Moving Forces used in the Arts.

Sources of Power, Vehicles of Power, *Animal Power*, Men, Horses, *Water Power*, Overshot Wheel, Chain Wheel, Undershot Wheel, Back Water, Besant's Wheel, Lambert's Wheel, Breast Wheel, Horizontal Wheel, Barker's Mill, Wind Power, Vertical Windmill, Adjustment of Sails, Horizontal Windmill, *Steam Power*, Steam, Applications of Steam, By Condensation, By Generation, By Expansion, The Steam Engine, Boiler Appendages, Engine, Noncondensing Engine, Condensing Engines, Description, Expansion, Engines, Valves, Pistons, Parallel Motion, Historical Remarks, Projected Improvements, Rotative Engines, Use of Steam at High Temperatures, Use of Vapors of Low Temperature, Gas Engines, Steam Carriages, Steam Gun, *Gunpowder*, Manufacture, Detonation, Force, Properties of a Gun, Blasting.

CHAPTER XVII.

Arts of Conveying Water.

Of Conducting Water—Aqueducts, Water Pipes, Friction of Pipes, Obstruction of Pipes, Syphon, *Of Raising Water*, Scoop Wheel, Persian Wheel, Noria, Rope Pump, Hydreole, Archimedes' Screw, Spiral Pump, Centrifugal Pump, Common Pumps, Forcing Pumps, Plunger Pump, Delahire's Pump, Hydrostatic Press, Lifting Pump, Bag Pump, Double Acting Pump, Rolling Pump, Eccentric Pump, Arrangement of Pipes, Chain Pump, Schemnitz Vessels, or Hungarian Machine, Hero's Fountain, Atmospheric Machines, Hydraulic Ram, *Of Projecting Water*, Fountains, Fire Engines, Throwing Wheel.

CHAPTER XVIII.

Arts of Combining Flexible Fibres.

Theory of Twisting, Rope Making, *Cotton Manufacture*, Elementary Inventions, Batting, Carding, Drawing, Roving, Spinning, Mule Spinning, Warping, Dressing, Weaving, Twilling, Double Weaving, Cross Weaving, Lace, Carpeting, Tapestry, Velvets, Linens, *Woolens*, *Felting*, *Paper Making*.

CHAPTER XIX.

Arts of Horology.

Sun Dial, Clepsydra, Water Clock, Clock Work, Maintaining Power, Regulating Movement, Pendulum, Balance, Scapement, Description of a Clock, Striking Part, Description of a Watch.

CHAPTER XX.

Arts of Metallurgy.

Extraction of Metals, Assaying, Alloys, *Gold*, Extraction, Cupellation, Parting, Cementation, Alloy, Working, Gold Beating, Gilding on Metals, Gold Wire, *Silver*, Extraction, Working, Coining, Plating, *Copper*, Extraction, Working, Brass, Manufacture, Buttons, Pins, Bronze, *Lead*, Extraction, Manufacture, Sheet Lead, Lead Pipes, Leaden Shot, *Tin*, Block Tin, Tin Plates, Silvering of Mirrors, *Iron*, Smelting, Crude Iron, Casting, Malleable Iron, Forging, Rolling and Slitting, Wire Drawing, Nail Making, Gun Making, Steel, Alloys of Steel, Case Hardening, Tempering, Cutlery.

CHAPTER XXI.

Arts of Vitrification.

Glass, Materials, Crown Glass, Fritting, Melting, Blowing, Annealing, Broad Glass, Flint Glass, Bottle Glass, Cylinder Glass, Plate Glass, Moulding, Pressing, Cutting, Stained Glass, Enamelling, Artificial Gems, Devitrification, Reaumur's Porcelain, Crystallo-Ceramie, Glass Thread, Remarks.

CHAPTER XXII.

Arts of Induration by Heat.

Bricks, Tiles, Terra Cotta, Crucibles, Pottery, Operations, Stone Ware, White Ware, Throwing, Pressing, Casting, Burning, Printing, Glazing, China Ware, European Porcelain, Etruscan Vases.

A FAMILIAR TREATISE ON THE CONSTITUTION OF THE UNITED STATES, by the Hon. JUDGE STORY, L L. D., *Author of 'Commentaries on the Constitution,' &c.*

LIFE OF DR. FRANKLIN.

SELECTIONS FROM THE WRITINGS OF FRANKLIN, by JARED SPARKS, L L. D., *Professor of History in Harvard University, Author of 'the Life and Writings of Washington,' 'the Life and Writings of Franklin,' &c .&c.*

CHRISTIANITY AND KNOWLEDGE, by the Rev. ROYAL ROBBINS.

The design of this Work is to show what Christianity has done for the human intellect, and what that has done for Christianity.

THE LORD OF THE SOIL, OR, PICTURES OF AGRICULTURAL LIFE; by Rev. WARREN BURTON, *Author of 'The District School as it Was,' &c. &c.*

SCIENCE AND THE ARTS, by the Rev. ALONZO POTTER, D. D., *Professor of Moral Philosophy and Rhetoric, in Union College, Schenectady, N. Y.*

The design of this Work is to call attention to the fact that the Arts are the result of *intelligence*—that they have, each one its *principles* or *theory*—that these principles are furnished by *Science*, and that he, therefore, who would understand the Arts, must know something of Science; while, on the other hand, he who would see the true power and worth of Science ought to study it in its applications. The work will be made up of *facts*, illustrating and enforcing these views—so arranged as to exhibit the invariable connexion between *processes* in *Art*, and *laws* in *Nature*. The importance of such a work requires no comment.

AGRICULTURE, by the Hon. JUDGE BUEL, of Albany, *Editor of 'the Cultivator.'*

This Work is intended as an aid to the *Young Farmer*, and from the known character of the gentleman who has it in hand, there can be no doubt but that it will be executed in a highly satisfactory manner. The following, among other subjects, will be therein treated of, viz.

1. The Importance of Agriculture to a Nation.
2. Improvement in our Agriculture practicable and necessary.
3. Some of the principles of the new and improved Husbandry.
4. Agriculture considered as an Employment.
5. Earths and Soils.
6. Improvement of the Soil.
7. Analogy between Animal and Vegetable Nutrition.
8. Further Improvement of the Soil.
9. " " by Manures, Animal and Vegetable.
10. " " by Mineral Manures.
11. Principles and Operations of Draining.
12. Principles of Tillage.
13. Operations of Tillage, &c. &c.

Due notice will also be taken of alternating crops, root husbandry, mixed husbandry, the management of pasture and meadow lands, the garden, orchard, &c.

Cuts, illustrative of the various operations spoken of and recommended, will be given.

GEOLOGY AND MINERALOGY, by CHARLES T. JACKSON, M. D., *Geological Surveyor of Maine and Rhode Island.*

STATISTICS OF THE UNITED STATES, by GEORGE TUCKER, *Professor of Moral Philosophy in the University of Virginia, Author of 'the Life of Jefferson,' &c. &c.*

AMERICAN TREES AND PLANTS, used for medicinal and economical purposes and employed in the Arts, with numerous engravings ; by Professor JACOB BIGELOW, *Author of 'Plants of Boston,' 'Medical Botany,' &c. &c.*

MORAL EFFECTS OF INTERNAL IMPROVEMENTS, by ROBERT RANTOUL, Jr., Esq.

LIVES OF THE REFORMERS, by Rev. ROMEO ELTON, *Professor of Languages in Brown University.*

BIOGRAPHICAL SKETCHES OF DISTINGUISHED FEMALES, by Mrs. EMMA C. EMBURY, of *Brooklyn, N. Y.*

SKETCHES OF AMERICAN CHARACTER, by Mrs. SARAH J. HALE, *Editor of 'the Ladies' Book,' Author of the 'Ladies' Wreath,' 'Flora's Interpreter,' &c. &c.*

DO RIGHT AND HAVE RIGHT, by Mrs. ALMIRA H. LINCOLN PHELPS, *Principal of the Literary Department of the Young Ladies' Seminary, at West Chester, Pa., formerly of the Troy Seminary, N. Y., Author of 'Familiar Lectures on Botany,' 'Female Student,' &c.*

The object of this Work may be gathered from the following remarks of Mrs. Phelps. "A popular work on the principles of law, with stories illustrating these principles, might be very profitable to people in common life, as well as to children. The ward cheated by a guardian, the *widow* imposed on by administrators or executors, the *wife* abandoned by a husband, with whom she had trusted her paternal inheritance, the *partner* in business, overreached by his crafty associate, for want of a knowledge of the operations of the law,—all these might be exhibited in such a way as to teach the necessity of legal knowledge to both sexes, and to all ages and classes."

SCENES IN THE LIFE OF JOANNA OF SICILY, by Mrs. E. F. ELLET, *of Columbia, S. C.*

This is written with a view to young readers, and for the purpose of illustrating important historical events.

The Publishers have also in preparation for this Series, a History of the United States, and of other Countries, a History of the Aborigines of our Country, a History of Inventions, Works on Botany, Natural History, &c. &c. Many distinguished writers, not here mentioned, have been engaged, whose names will be in due time announced, although at present, we do not feel at liberty to make them public.

Among the works prepared, and in a state of forwardness, for the *Juvenile Series* are the following, viz.

MEANS AND ENDS, OR SELF TRAINING, by Miss CAROLINE SEDGWICK, *Author of* '*The Poor Rich Man, and Rich Poor Man,*' '*Live and Let Live,*' '*Home,*' *&c. &c.*

NEW-ENGLAND HISTORICAL SKETCHES, by N. HAWTHORNE, *Author of* '*Twice Told Tales,*' *&c.*

CONVERSATIONS AND STORIES BY THE FIRE SIDE, by Mrs. SARAH J. HALE,

FAILURE NOT RUIN, by HORATIO G. HALE, A. M.

TALES IN PROSE, blending instruction with amusement; by Miss MARY E. LEE, of *Charleston, S. C.*

PICTURES OF EARLY LIFE :—Stories; each inculcating some moral lesson; by Mrs. EMMA C. EMBURY, of *Brooklyn, N. Y.*

FREDERICK HASKELL'S VOYAGE ROUND THE WORLD, by H. G. HALE, A. M., *Philologist to the Exploring Expedition.*

BIOGRAPHY FOR THE YOUNG, by Miss E. ROBBINS, *Author of* '*American Popular Lessons,*' *Sequel to the same, &c.*

THE WONDERS OF NATURE, by A. J. STANSBURY, Esq., of *Washington City ;* illustrated by numerous cuts.

WORKS OF ART, *by the same ;* illustrated by numerous cuts.

PLEASURES OF TASTE, AND OTHER STORIES selected from the Writings of JANE TAYLOR, with a sketch of her life, (and a likeness,) by Mrs. S. J. HALE.

SELECTIONS FROM THE WORKS OF MRS. BARBAULD, *with a Life and Portrait.*

SELECTIONS FROM THE WORKS OF MARIA EDGEWORTH, *with a Life and Portrait.*

SELECTIONS FROM THE WORKS OF MRS. SHERWOOD, *with a Life and Portrait.*

SELECTIONS FROM THE WORKS OF DR. AIKIN, *with a Sketch of his Life, by* MRS. HALE.

CHEMISTRY FOR BEGINNERS, by BENJAMIN SILLIMAN, Jr., *Assistant in the Department of Chemistry, Mineralogy, and Geology in Yale College ;* aided by Professor SILLIMAN.

MY SCHOOLS AND MY TEACHERS, by Mrs. A. H. Lincoln Phelps.

The author's design in this work, is to describe the Common Schools as they were in New-England at the beginning of the present century ; to delineate the peculiar characters of different Teachers ; and to give a sketch of her various school companions, with their progress in after life, endeavoring thereby to show that the child, while at school, is forming the future man, or woman.

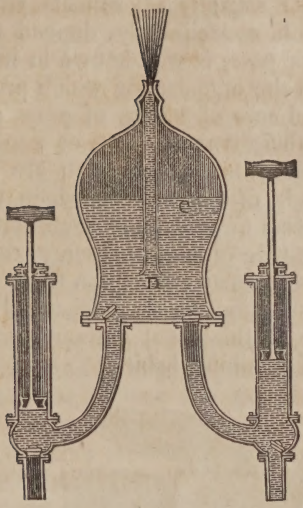
It is not the intention of the Publishers to drive these works through the Press with an undue speed, in the hope of securing the market, by the multiplicity of the publications cast upon the community ; they rely for patronage, upon the intrinsic merits of the works, and consequently time must be allowed the writers to mature and systematize them. The more surely to admit of this, the two Series will be issued in sets of five and ten volumes at a time. Besides the advantage above alluded to, that will result from such an arrangement, it will place The School Library within the reach of those Districts, which, from the limited amount of their annual funds, would not otherwise be enabled to procure it.

The works will be printed on paper and with type expressly manufactured for the Library ; will be bound in cloth, with goat-skin backs having gilt titles upon them, and, for greater durability, cloth hinges inside of the covers.

The *larger Series* will be furnished to Schools, Academies, &c., at *seventy-five cents* per volume, and the *Juvenile Series* at *forty cents* per volume ; which the Publishers advisedly declare to be cheaper, than any other series of works that can be procured at home or abroad, bearing in mind their high intellectual character, and the style of their mechanical execution.

The Publishers solicit orders from School Committees, Trustees, Teachers, and others, for either or both Series, and wish particular directions *how*, to *whom*, and *to what place*, the books shall be forwarded.

Annexed are Specimen Pages of the two Series.



carried into the reservoir, and they fill it half full of water, C; the mouth of the pipe, D, which is to convey away the water, reaches into the water in the reservoir. As the water rises, the air is compressed: so that, although the pumps act alternately, the elasticity of the contained air acts uninterruptedly in pressing on the surface of the water, and raising it by the tube, D, in an equable stream. The elasticity of the contained air, fills up the interval between the actions of the pumps, and admits of no interruption to the force with which the water is propelled upwards.

Surely these are sufficient indications of the necessity of three powers acting in propelling the blood from the heart. The first, is a sudden and powerful action of the ventricle: the second, is a contraction of the artery, somewhat similar, excited by its distention: the third, though a property independent of life, is a power permitting no interval or alternation; it is the elasticity of the coats of the artery: and these three powers, duly adjusted, keep up a continued stream in the blood-vessels. It is true, that when an artery is wounded, the blood flows

The superior sagacity of animals which hunt their prey, and which, consequently, depend for their livelihood upon their *nose*, is well known in its use; but not at all known in the organization which produces it.

The external *ears* of beasts of prey, of lions, tigers, wolves, have their trumpet-part, or concavity, standing forward, to seize the sounds which are before them—viz., the sounds of the animals which they pursue or watch. The ears of animals of flight are turned backward, to give notice of the approach of their enemy from behind, whence he may steal upon them unseen. This is a critical distinction, and is mechanical; but it may be suggested, and, I think, not without probability, that it is the effect of continual habit.

[Heads of the hare and wolf, showing the different manner in which the ears are turned.—Am. Ed.]

The *eyes* of animals which follow their prey by night, as cats, owls, &c., possess a faculty not given to those of other species, namely, of closing the pupil *entirely*.

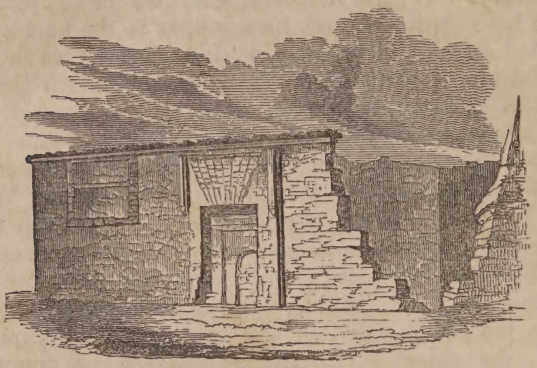
It is difficult even for the imagination to conceive the feelings of such a man, at the moment of so sublime a discovery. What a bewildering crowd of conjectures must have thronged upon his mind, as to the land which lay before him, covered with darkness. That it was fruitful was evident from the vegetables which floated from its shores. He thought, too, that he perceived in the balmy air the fragrance of aromatic groves. The moving light which he had beheld, proved that it was the residence of man. But what were its inhabitants? Were they like those of other parts of the globe; or were they some strange and monstrous race, such as the imagination in those times was prone to give to all remote and unknown regions? Had he come upon some wild island, far in the Indian seas; or was this the famed Cipango itself, the object of his golden fancies? A thousand speculations of the kind must have swarmed upon him, as he watched for the night to pass away; wondering whether the morning light would reveal a savage wilderness, or dawn upon spicy groves, and glittering fanes, and gilded cities, and all the splendors of oriental civilization.

CHAPTER XI.

First Landing of Columbus in the New World.—Cruise among the Bahama Islands.—Discovery of Cuba and Hispaniola. [1492.]

When the day dawned, Columbus saw before him a level and beautiful island, several leagues in extent, of great freshness and verdure, and covered with trees like a continual orchard. Though every thing appeared in the wild luxuriance of untamed nature, yet the island was evidently populous, for the inhabitants were seen issuing from the woods, and running from all parts to the shore. They were all perfectly naked, and from their attitudes

residence of Martin Alonzo or Vicente Yañez Pinzon, in the time of Columbus.



We now arrived at the church of St. George, in the porch of which Columbus first proclaimed to the inhabitants of Palos the order of the sovereigns, that they should furnish him with ships for his great voyage of discovery. This edifice has lately been thoroughly repaired, and, being of solid mason-work, promises to stand for ages, a monument of the discoverers. It stands outside of the village, on the brow of a hill, looking along a little valley toward the river. The remains of a Moorish arch prove it to have been a mosque in former times; just above it, on the crest of the hill, is the ruin of a Moorish castle.

I paused in the porch, and endeavored to recall the interesting scene that had taken place there, when Columbus, accompanied by the zealous friar Juan Perez, caused the public notary to read the royal order in presence of the astonished alcaldes, regidors, and alguazils; but it is difficult to conceive the consternation that must have been struck into so remote a little community, by this sudden apparition of an entire stranger among them, bearing a command that they should put their persons and ships at his disposal, and sail with him away into the unknown wilderness of the ocean.

The interior of the church has nothing remarkable,

work of creation and the work of grace revealed in the word of God. Proofs corroborative of the authenticity of the Bible, have been gathered from those very sources which formerly were applied to by the skeptic for his sharpest weapons; and at this moment, (such is the security with which Christianity may regard the progress of knowledge,) there does not exist in our own country, nor, so far as I am aware, in any other, one philosopher of eminence who has ventured to confront Christianity and philosophy, as manifestly contradictory. May we not venture to hope that, in a very short time, the weak darts of minor spirits, which from time to time are still permitted to assail our bulwarks, will be also quenched, and the glorious Gospel, set free from all the oppositions of science falsely so called, shall walk hand in hand over the earth with a philosophy always growing in humility, because every day becoming more genuine. C. J. C. D.

TWELFTH WEEK—MONDAY.

VEGETABLE SUBSTANCES USED FOR WEAVING.—THE COTTON-PLANT.

THE cotton-plant, another vegetable substance, extensively used in manufactures, differs materially from that already described, in its properties, appearance, and habits. Instead of being generally diffused over temperate climates, it belongs more properly to the torrid zone, and the regions bordering on it; and instead of being chiefly confined to one species, as to its peculiar and useful qualities, its varieties seem scarcely to have any limit, extending from an herb* of a foot or two in height, to a tree†

* Gossypium herbaceum, or common herbaceous cotton-plant.

† Bombax ceiba, or American silk cotton-tree.—[The Baobab, or *Adansonia digitata*, an enormous and long-lived tree, also belongs to this family. But it is incorrect to call these trees "varieties" of the cotton plant. They are nearly allied to it, indeed, but they stand in different divisions of the great order of *malvaceæ*, or mallows; and the downy contents of their pods are of little use compared with true cotton. —AM. ED.]

Coup de main, (French term,) a military expression, denoting an instantaneous, sudden, unexpected attack upon an enemy.

Dulce et decorum est pro patria mori, It is delightful and glorious to die for one's country.

Effigies Seb. Caboti Angli filii Joannis Caboti militis aurati. As will be seen by the text, where this inscription occurs, (p. 121,) there is an ambiguity in the application of the last two words. The other part of the inscription, may be rendered, "the portrait (or likeness) of Sebastian Cabot, of England, son of John Cabot." *Miles*, or *militis*, means, literally, a warrior, or soldier, or officer of the army; and in the English law, sometimes indicates a knight. *Auratus*, or *aurati*, means gilt, gilded, or decked with gold. *Eques* means a horseman, or knight, who was frequently called *eques auratus*, because, anciently, none but knights were allowed to beautify their armor, and other habiliments, with gold.

En masse, in a body, in the mass, altogether.

Eques, and *Eques auratus*. See *Effigies*.

Fascine, (pl. *fascines*,) a bundle of fagots, or small branches of trees, or sticks of wood, bound together, for filling ditches, &c.

Formula, (pl. *formulæ*,) a prescribed form or order.

Geodætic, relating to the art of measuring surfaces.

Gramina, grasses.

Green Mountain Boys, a term applied, during the Revolutionary War, to the inhabitants of Vermont, (Green Mountain,) particularly those who were in the army.

Gymnotus, the electric eel.

Habeas Corpus, "you may have the body." A writ, as it has been aptly termed, of personal freedom; which secures, to any individual, who may be imprisoned, the privilege of having his cause immediately removed to the highest court, that the judges may decide whether there is ground for his imprisonment or not.

Hipparchus, a celebrated mathematician and astronomer of Nicæa, in Bithynia, who died 125 years before the Christian era. He was the first after Thales and Sulpicius Gallus, who found out the exact time of eclipses, of which he made a calculation for 600 years. He is supposed to have been the first, who reduced astronomy to a science, and prosecuted the study of it systematically.

Loyalists, Royalists, Refugees, and Tories. In the times of the Revolution, these terms were used as technical or party names, and were sometimes applied indiscriminately. Strictly speaking, however, *Loyalists*, were those whose feelings or opinions were in favor of the mother country, but who declined taking part in the Revolution; *Royalists*, were those who preferred or favored, a kingly government; *Refugees*, were those who fled from the country and sought the protection of the British; and *Tories*, were those, who actually opposed the war, and took part with the enemy, aiding them by all the means in their power.

Magnetic Variation, a deviation of the needle in the mariner's compass, from an exact North and South direction.

Master-at-arms, an officer appointed to take charge of the small arms in a ship of war, and to teach the officers and crew the exercise of

ring it all the time. Of course I do not make it every time it is wanted, for sometimes, when I want it extra good, I boil and stir it a full hour, and then I put it away in a close vessel and in a cool place. For Raymond, or for any one getting well, and free from fever, I put in a third wheat flour, and half milk. You see it is a very simple process, sir."

"Yes—simple enough. But it is to these simple processes that people will not give their attention."

Mary had the happiness of seeing Raymond sitting up before their parents returned, and when they drove into the great gate, and up the lane, he was in his rocking-chair by the window, watching for them. They had heard of his illness, and were most thankful to find him so far recovered. The Doctor chanced to be present when they arrived. "O, Doctor!" said Mrs. Bond, after the first greetings were over, "how shall I ever be grateful enough to you?"

"I have done very little, Mrs. Bond," replied the honest Doctor. "In Raymond's case, medicine could do little or nothing. Nature had been overtasked, and wanted rest and soothing. Under God, Raymond owes his recovery to Mary."

"O, mother!" exclaimed Raymond, bursting into tears, "she is the best sister in the world!"

"She is the best sister in the *two* worlds!" cried little Grace Bond, a child of five years old.

A source of true comfort and happiness is such a child and such a sister as Mary Bond!—a light

us, as soon as we are missed; let us keep on and perhaps we may find some other path."

The poor children proceeded on their course, unconscious that every step was taking them deeper into the forest, until, completely bewildered by the thick darkness, and overcome with fatigue, they could go no further. "Let us pray to God, and then we can lie down, and die in peace," said George; and the innocent children knelt down on the fallen leaves, and lisped their simple prayers, as they were accustomed to do at their mother's side.

"We must try to find some shelter, George," said Kate, as they arose from their knees, "this chill air will kill you, even if we escape the wild beasts." As she spoke, the light of a young moon which faintly illumined the depths of the wood, enabled her to discover a hollow log lying near. Tearing off some branches from the brittle hemlock tree, she piled them around the log, in such a manner, as to form a sort of penthouse; and, placing George within the more effectual shelter of the log, she lay down by his side. Worn with fatigue, notwithstanding their fears, the children soon fell into a profound sleep; and the beams of the morning sun, shining through the branches which formed their covering, first awoke them from their peaceful slumbers.

Their little hearts swelled with gratitude to the merciful God, who had preserved them through the perils of the night, and the morning hymn which was wont to resound within the walls of their

Do Not Remove This Card From The Pocket.

Do NOT write above this line.

Boston Public Library
Central Library, Copley Square

Division of
Reference and Research Services

The Date Due Card in the pocket indicates the date on or before which this book should be returned to the Library.

Please do not remove cards from this pocket.

JUL 12 1918